

**Drawing Amendments:**

The objection to the figures has been addressed by the submission of the new formal drawings enclosed, specifically the margins and font size have been corrected.



1/39

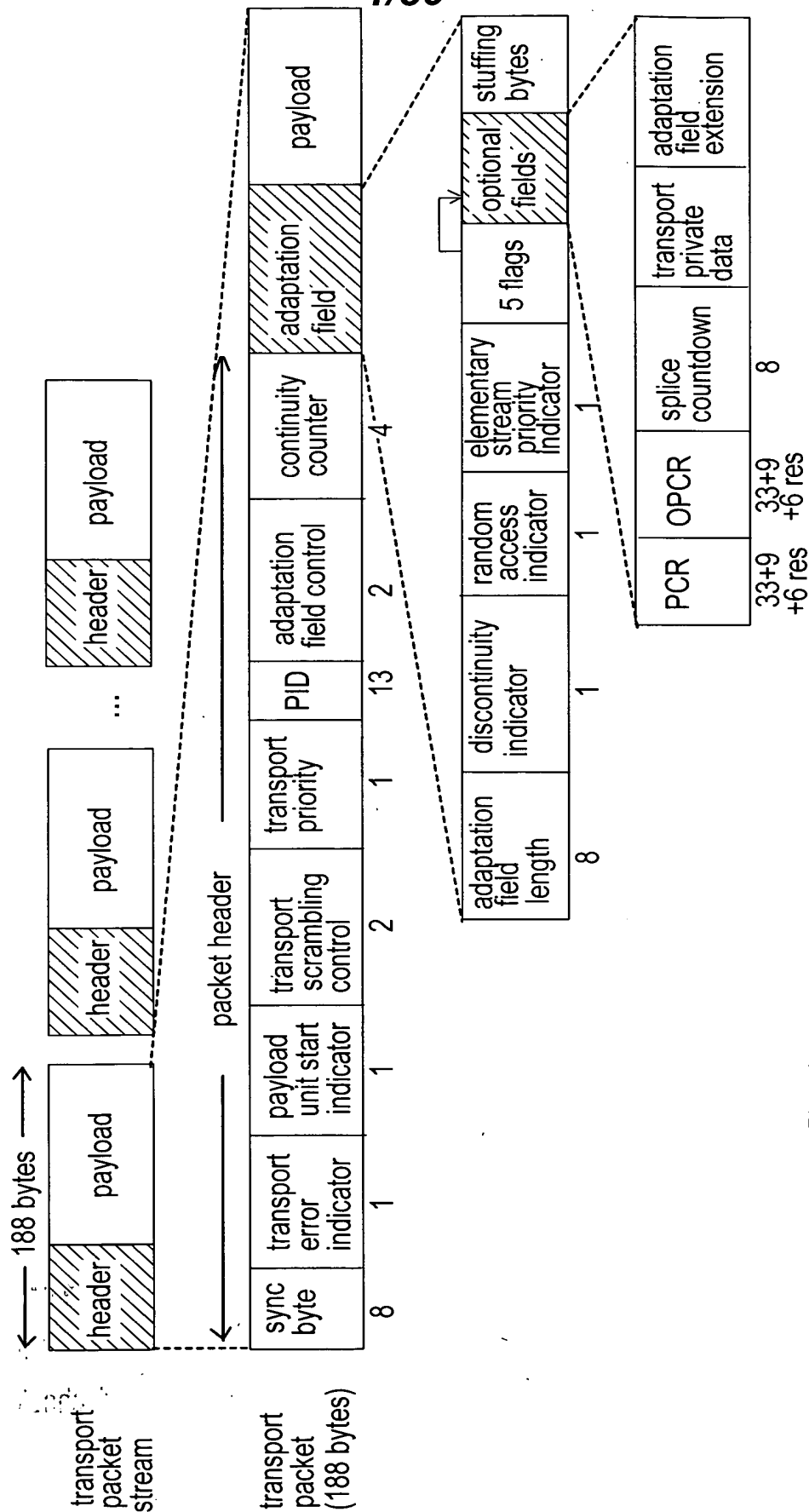
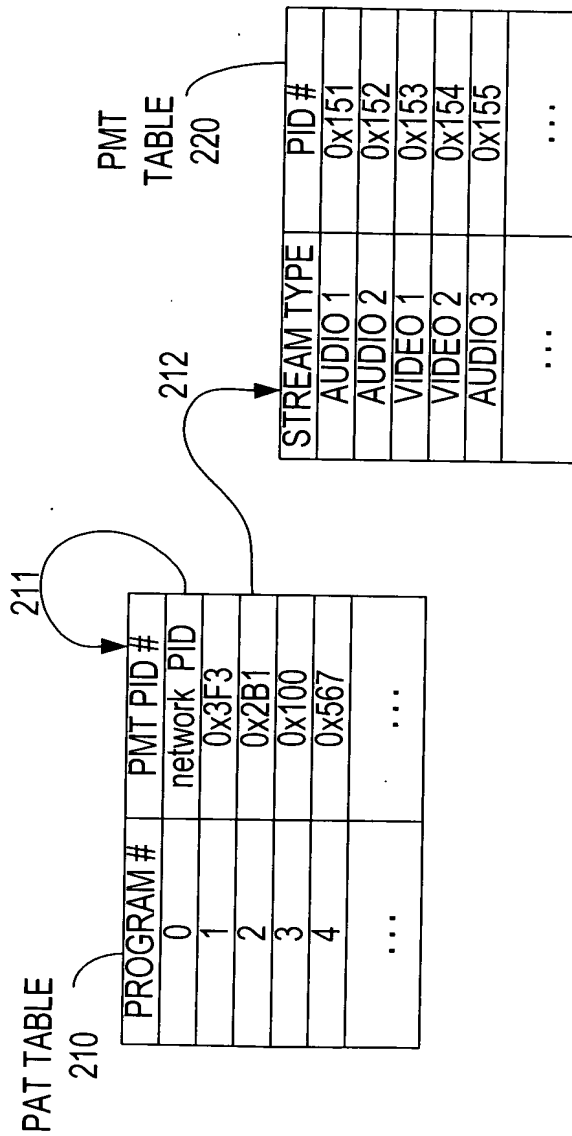


FIG. 1  
--PRIOR ART--



2/39



**FIG. 2**  
**--PRIOR ART--**



3/39

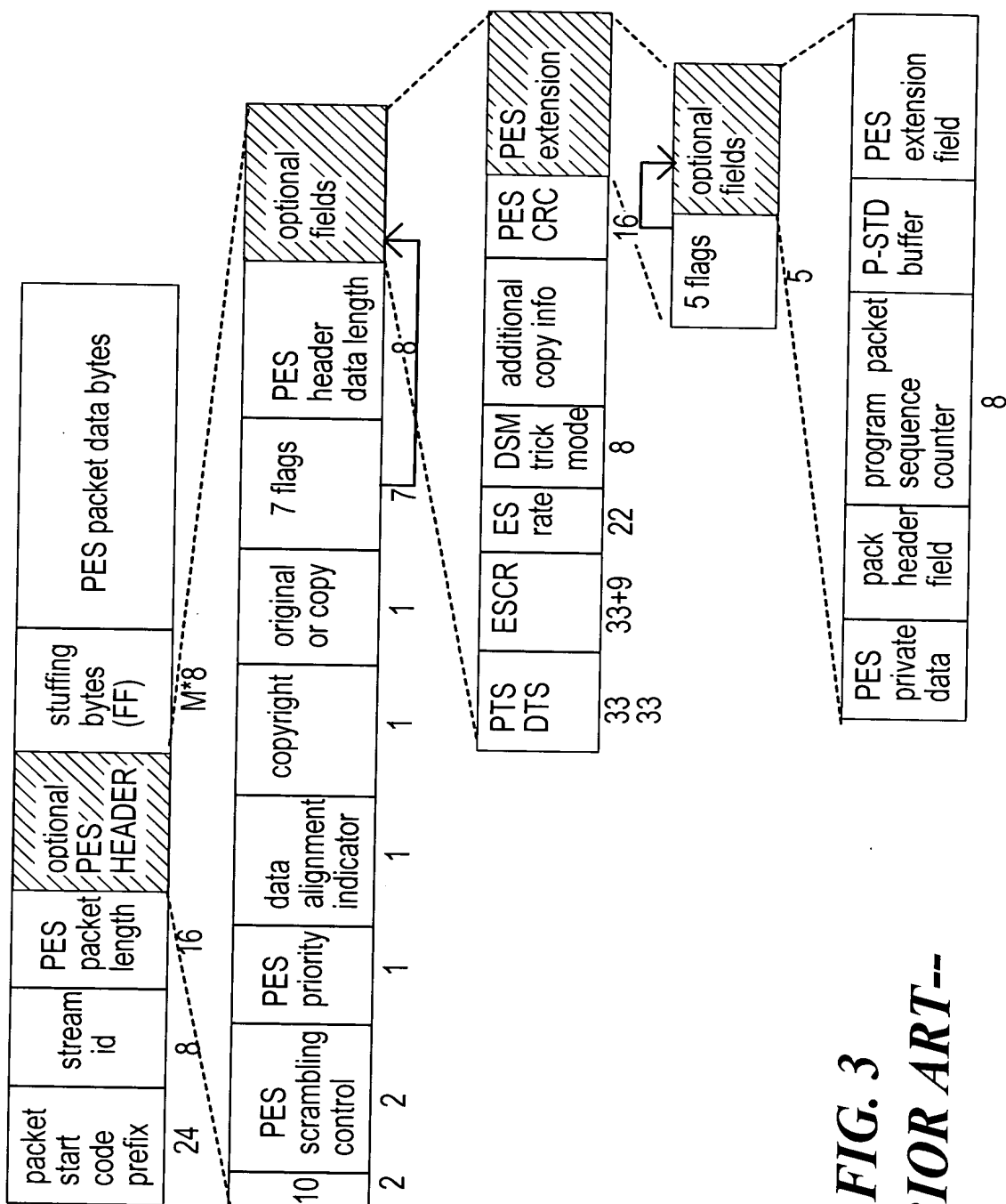
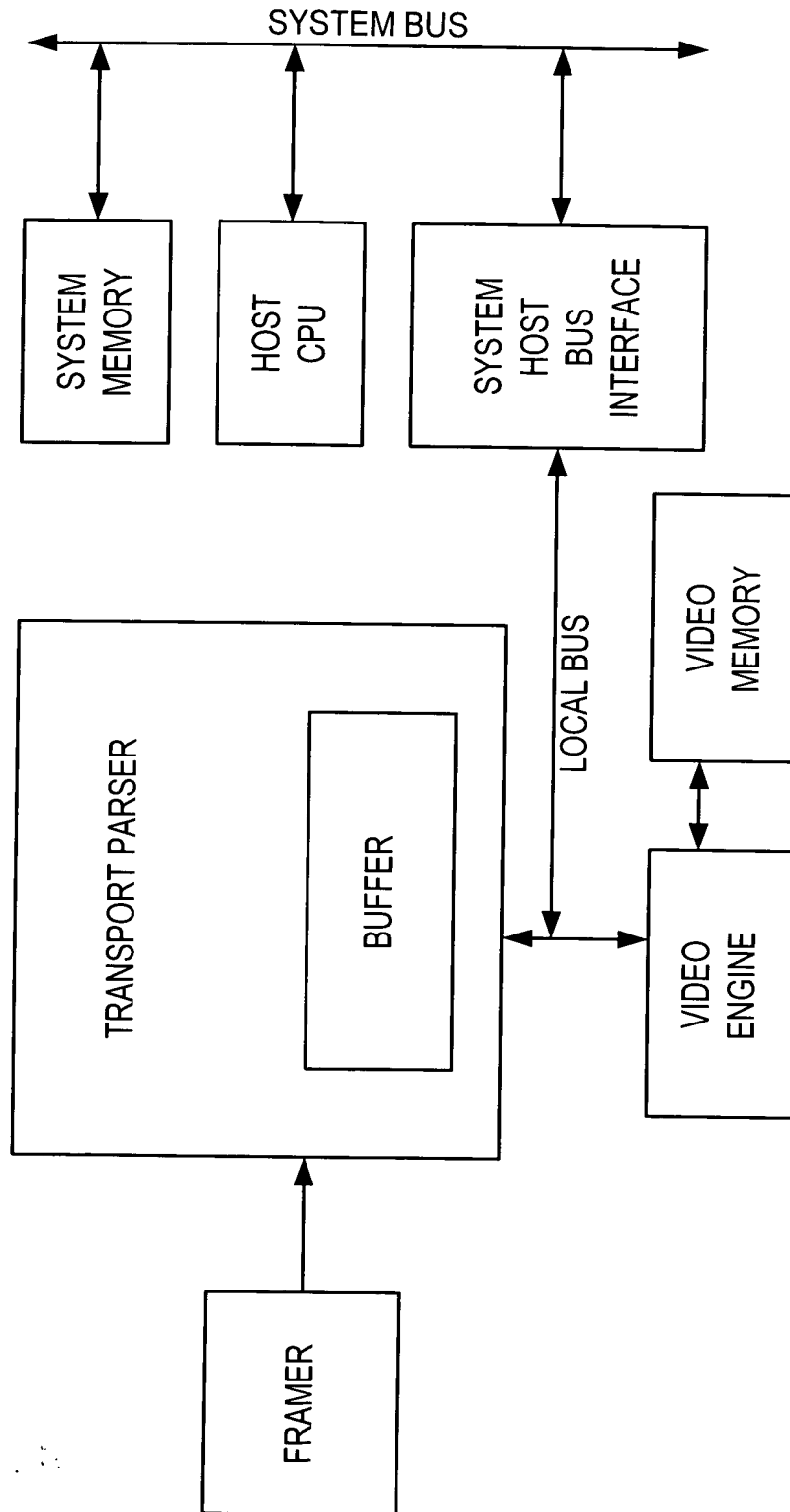


FIG. 3  
--PRIOR ART--



4/39



**FIG. 4**  
**--PRIOR ART--**



5/39

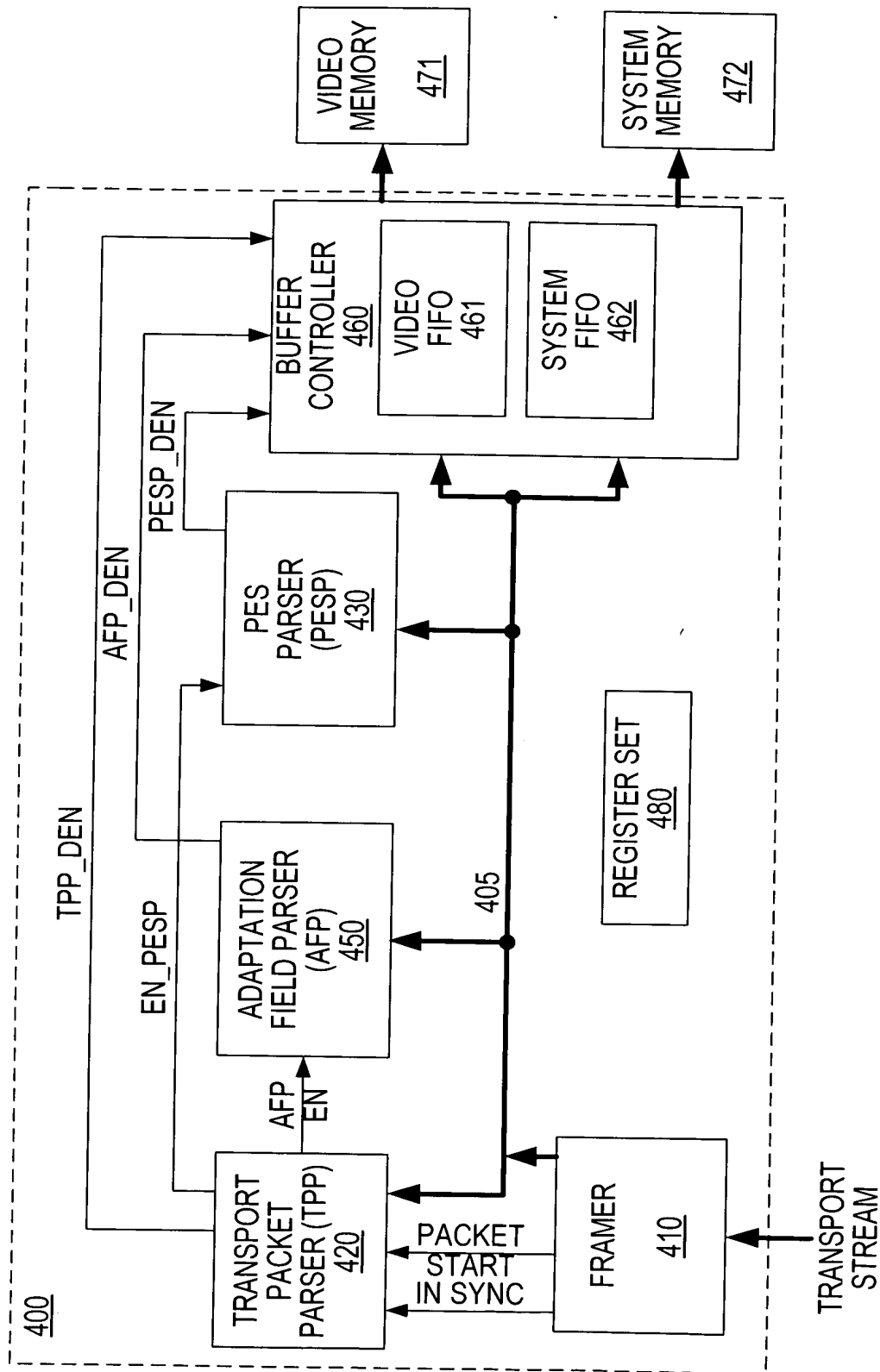


FIG. 5



6/39

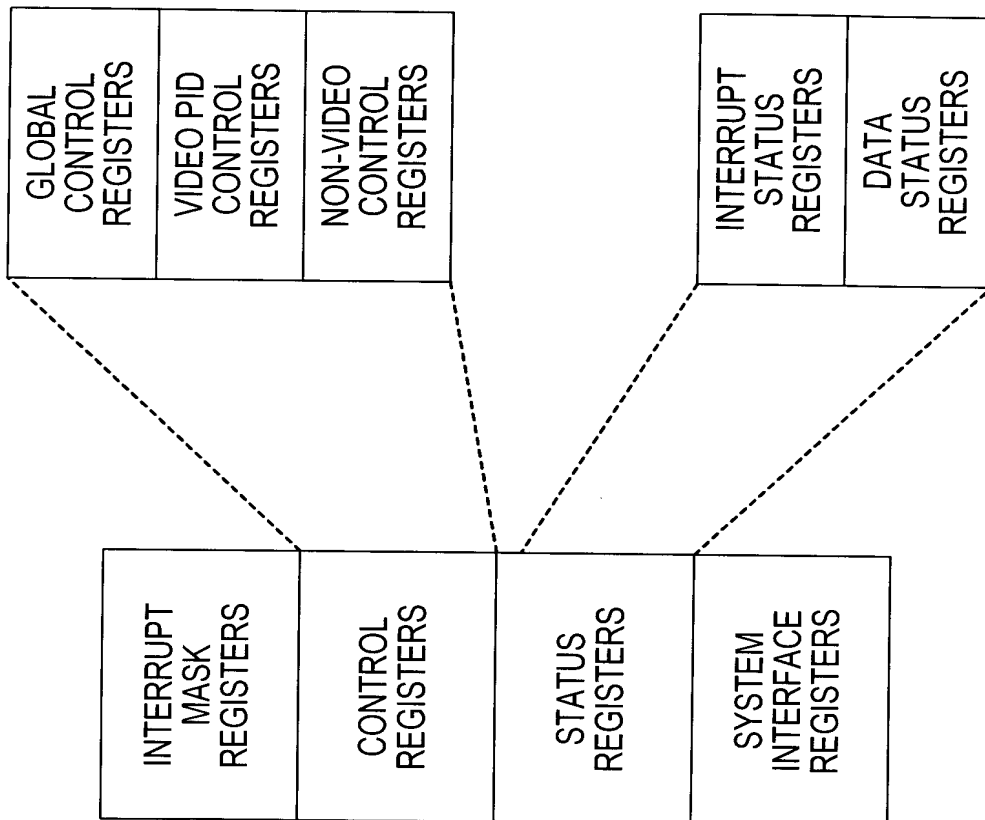
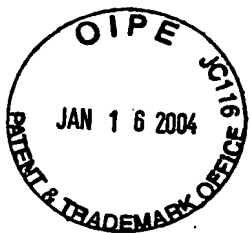


FIG. 6



7/39

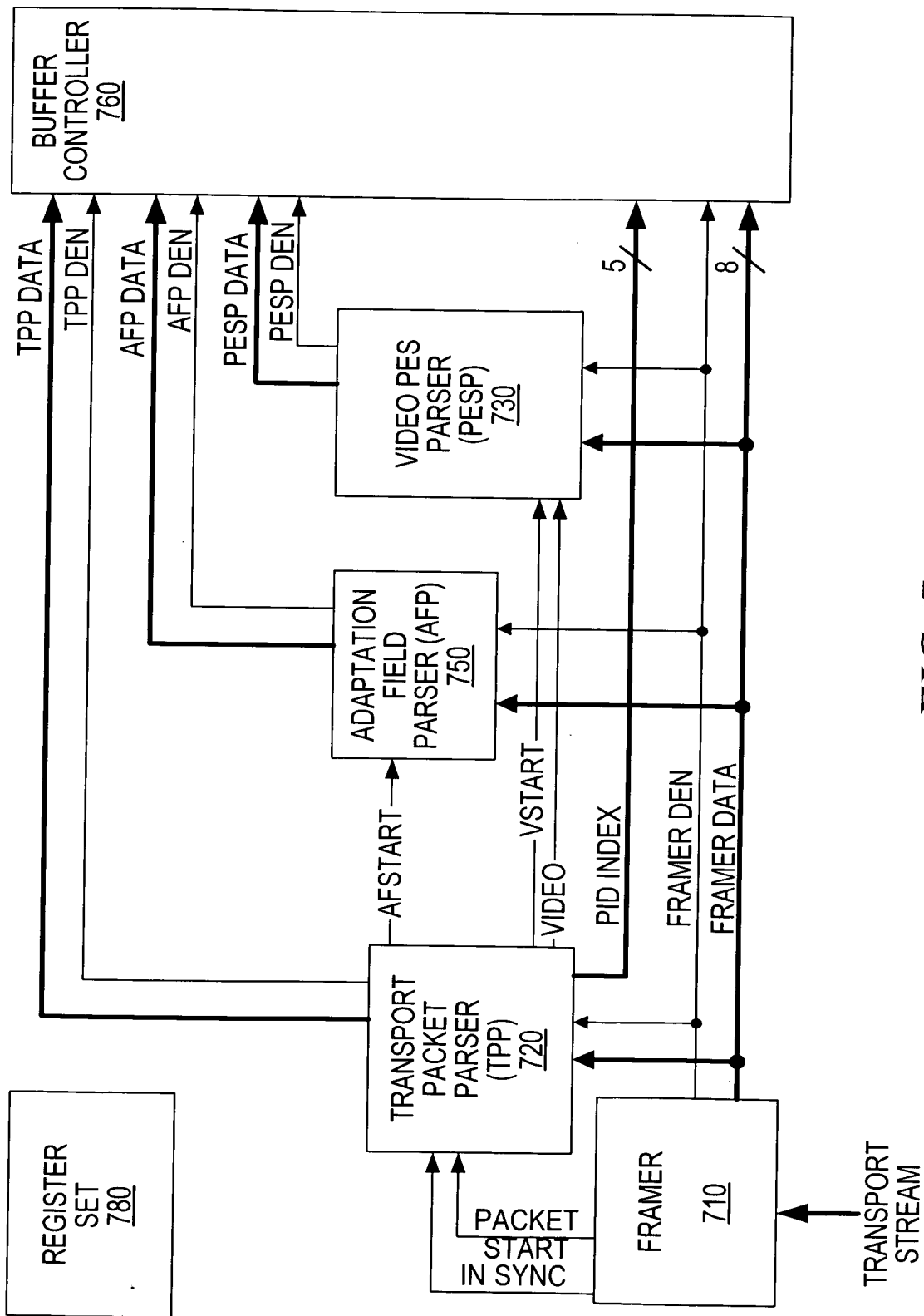
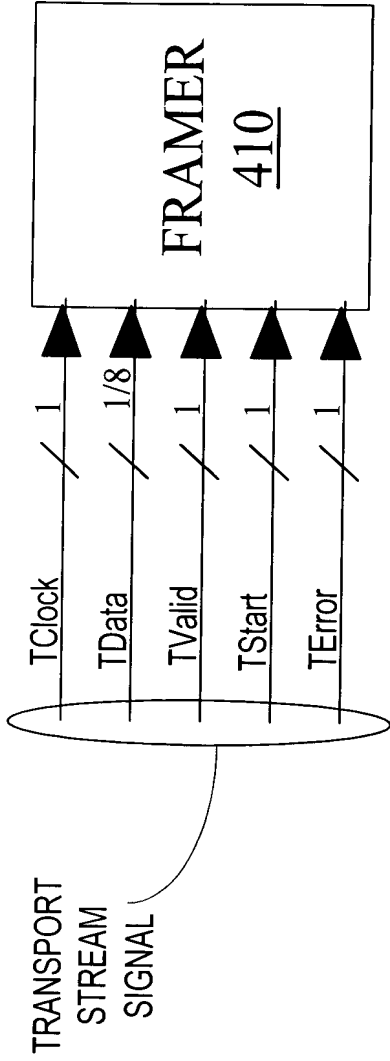
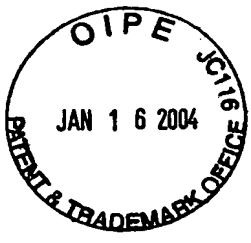
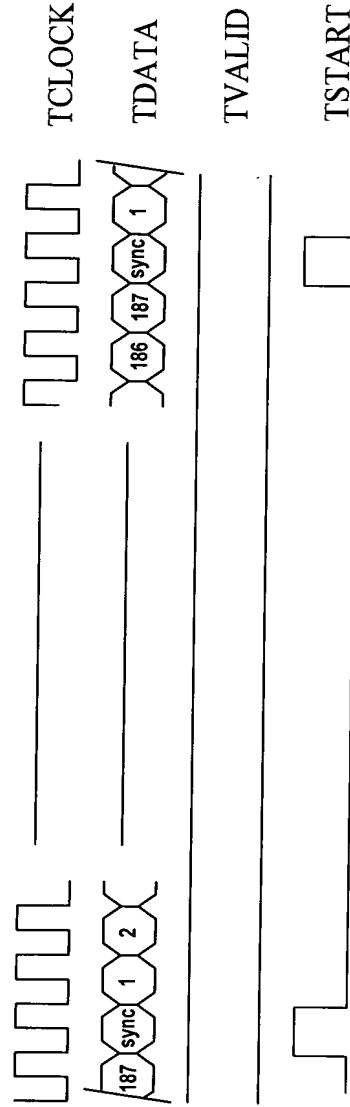


FIG. 7

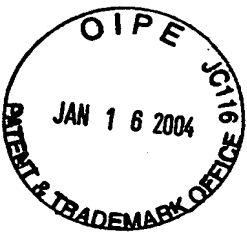




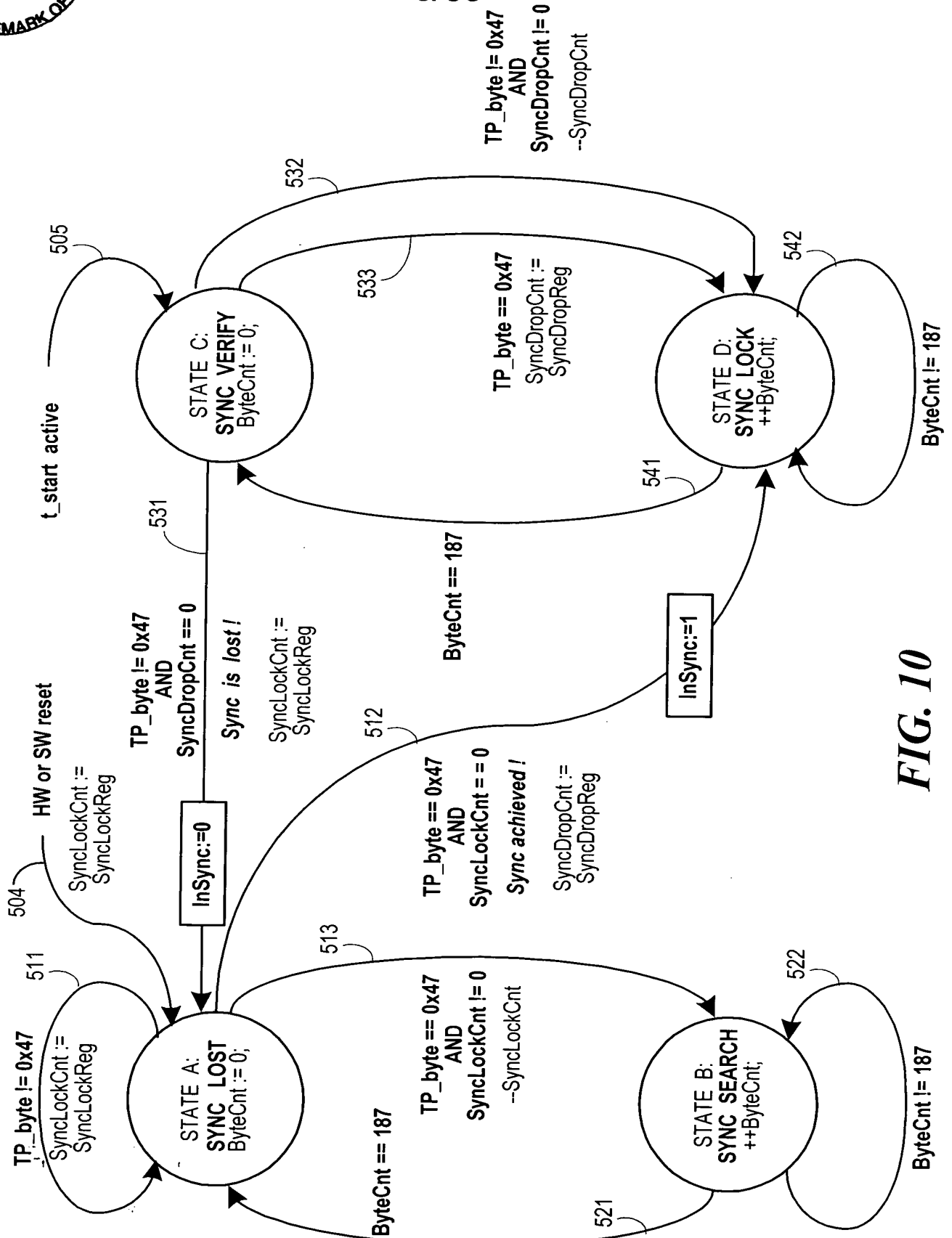
**FIG. 8**



**FIG. 9**



9/39



TP\_byte != 0x47  
AND  
SyncDropCnt != 0  
--SyncDropCnt

10/39

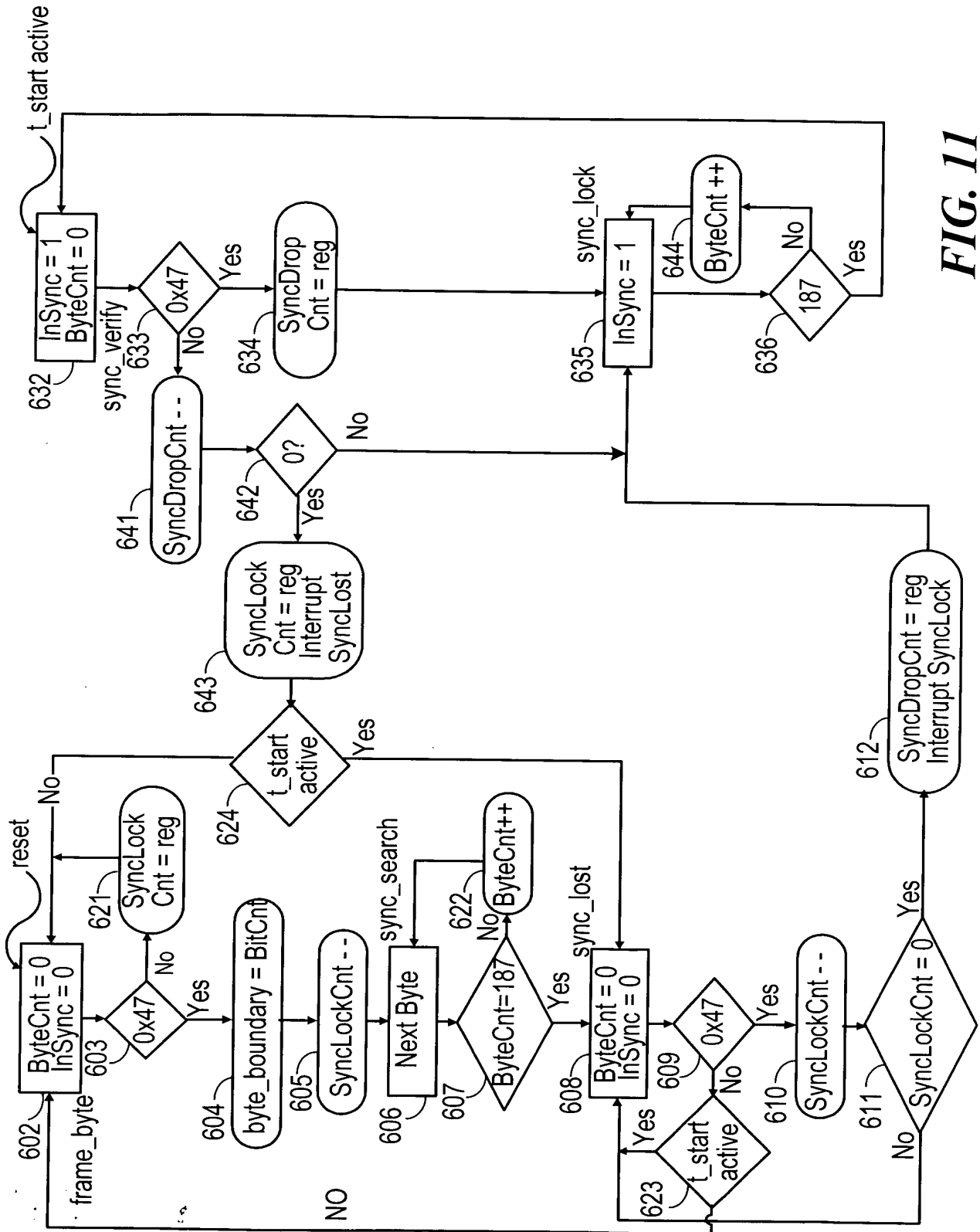


FIG. 11



11/39

Transport Demultiplexer Global Status Register				
Field Name	Bits	Len	Default	Type Description
FramerSyncLock	0	[ 1]	0	R/W This bit is set to '1' after the frame synchronization has been acquired. <b>WR_ACC_CLEAR.</b>
FramerSyncDrop	1	[ 1]	0	R/W This bit is set to '1' after the frame synchronization has been lost. <b>WR_ACC_CLEAR.</b>
CurrentFramerState	20-22	[ 3]	'000'	R This 3 bit field codes the current state of the framer: '000' – Capturing a byte '001' – Out of TP frame synchronization '010' – Searching for synchronization '011' – Checking for synchronization '100' – In the TP frame synchronization  NOTE: Only a framer state machine updates this field. Write access does not modify it.
UnusedField	29-31	[ 3]	'000'	R/W Unused and reserved field.

FIG. 12



12/39

Transport Demultiplexer Interrupt Mask Register			
Field Name	Bits	Len Default	Type Description
EventInterruptMask	0-18 [19]	0	R/W If set to '1' enables local sources of interrupts.  Bit 0 – FramerSyncLock Bit 1 – FramerSyncDrop  Bits 2 – 19 Other Functionality
EnableGlobalDemuxInterrupt	20 [4]	0	R/W If set to '1' enables globally TD core interrupts.
UnusedField	21-31 [11]	0	R/W Unused and reserved field. Always set to 0.

FIG. 13



13/39

Transport Demultiplexer Global Control Register				
Field Name	Bits	Len	Default	Type
FramerSyncLockLength	0-4	[ 5]	00101	R/W
Five bits field to select a number of consecutive transport packets after MPEG - 2 frame (bit-stream) synchronization is declared.				
FramerSyncDropLength	5-7	[ 3]	011	R/W
Three bits field to select a number of consecutive transport packets after a loss of MPEG - 2 frame synchronization is declared.				
FramerBitPolarity	8	[ 1]	0	R/W
'0' selects msb first (default mode), '1' select lsb first				
FramerClockPolarity	9	[ 1]	0	R/W
If set to '0' framer will latch on falling edge (default) If set to '1' framer will latch on rising edge.				
FramerMode:	10-11	[ 2]	'00'	R/W
Defines a combination of external control signals: '00' – Framer uses T_start only. '01' – Framer uses T_valid only. '10' – Framer uses T_start and T_valid. '11' – Framer uses T_clock and T_data only.				
Other Functionality Bits	12-15	[ 4]		
Other functionality (not relevant to Framer)				
T_ValidPolarity	16	[ 1]	1	R/W
'1' selects active high [5V] for t_valid external signal				
T_StartPolarity	17	[ 1]	1	R/W
'1' selects active high [5V] for t_start external signal				
T_ErrorPolarity	18	[ 1]	1	R/W
'1' selects active high [5V] for t_error external signal				
Other Functionality Bits	19-28	[ 10]		
Other functionality (not relevant to Framer)				
UnusedField	29-31	[ 3]	0	R/W
Unused and reserved field. Always set to 0.				

FIG. 14



14/39

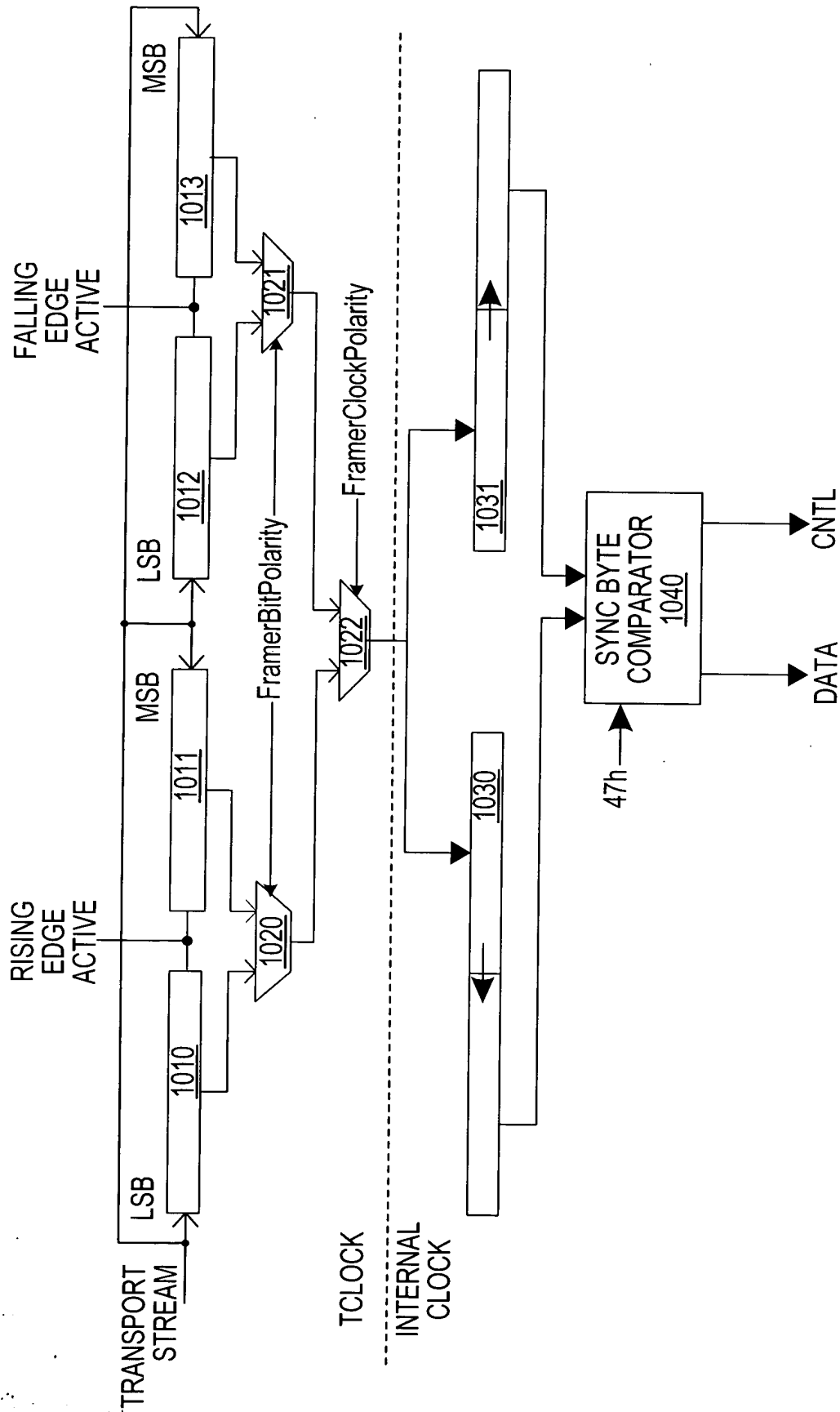
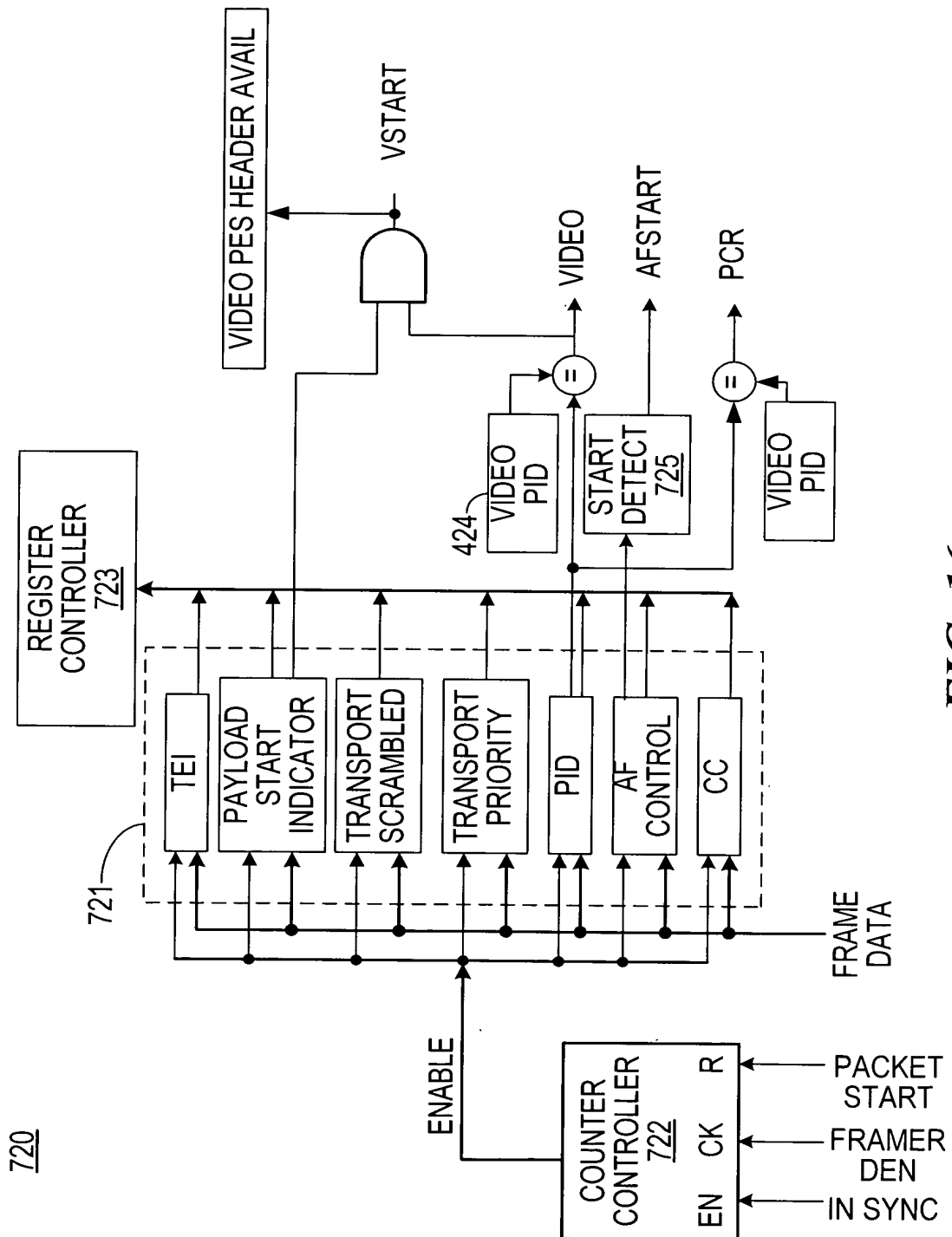


FIG. 15







16/39

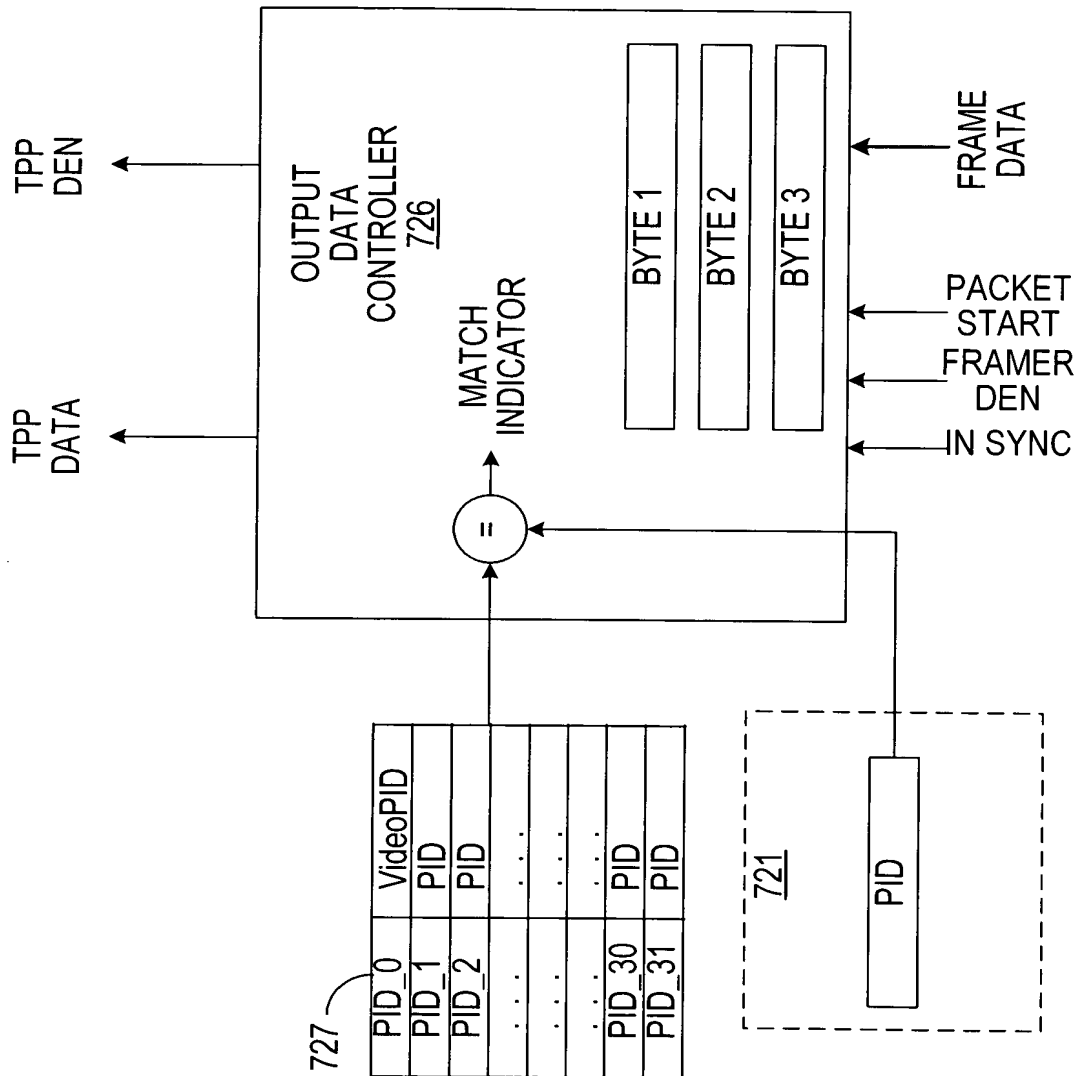


FIG. 17



17/39

Video Control Registers			
Field Name	Bits	Len	Default
VideoPid	0-12	[13]	0x1FFF
EnableParsing	13	[1]	0
StartFromPUSICCommand	14	[1]	0
ProcessStreamID	15	[1]	0
StreamID	16-23	[8]	0xE0

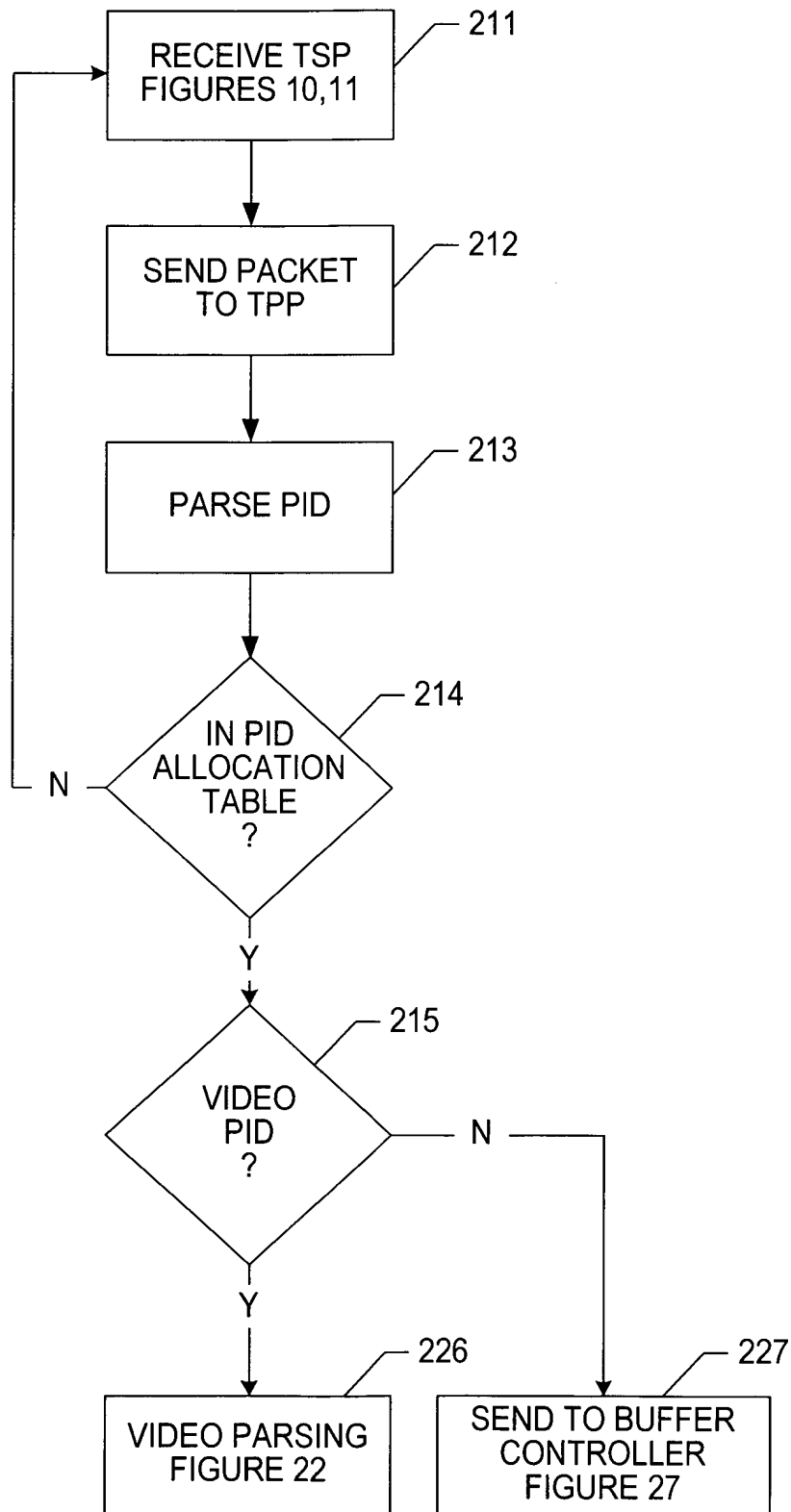
FIG. 18

Transport Demultiplexer Registers			
Field Name	Bits	Len	Default
PID_yz, 0 ≤ yz ≤ 30	0-12	[13]	0x1FFF
EnableParsing	13	[1]	0
BufferIndex	14-17	[4]	0

FIG. 19



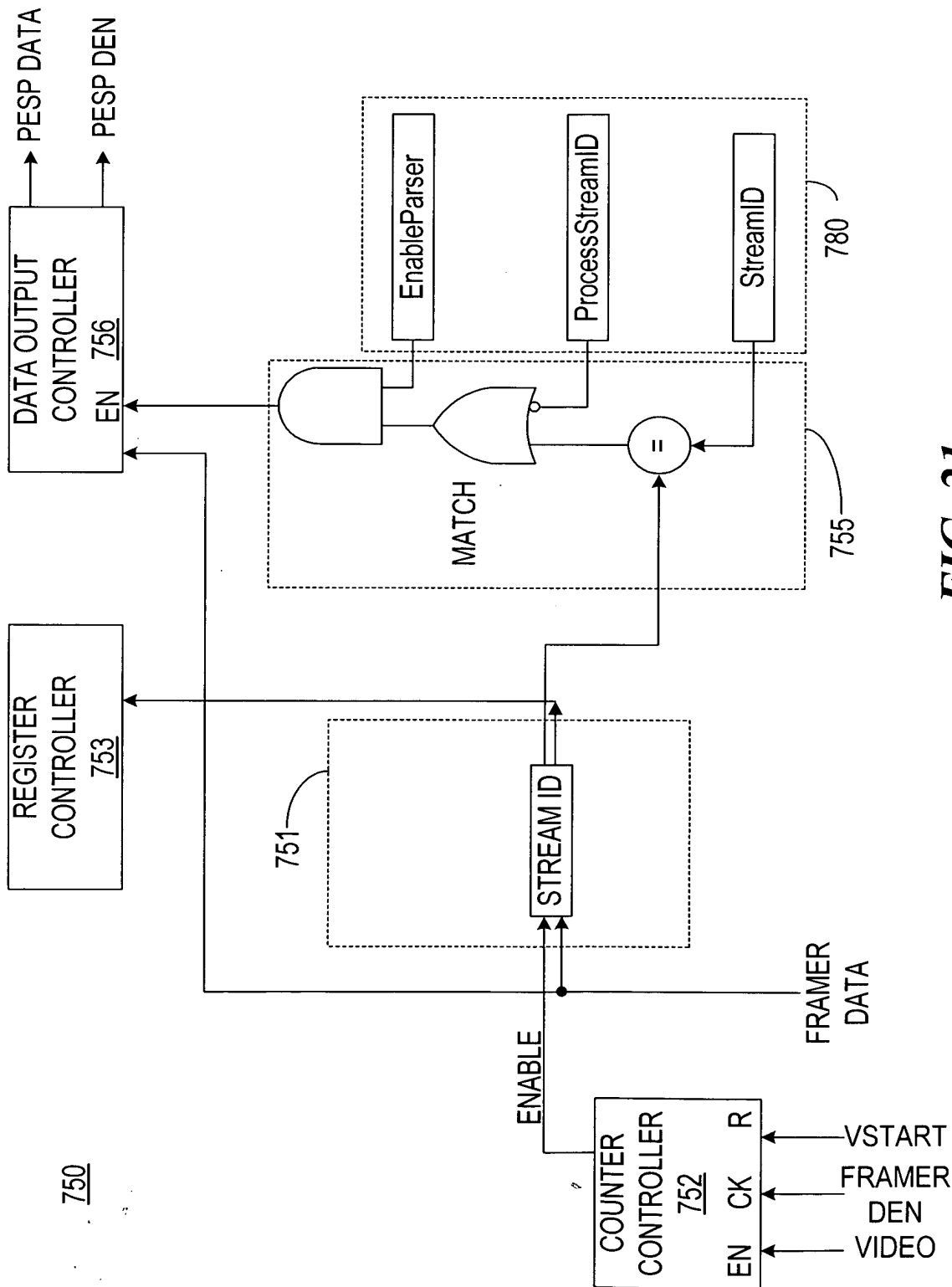
**18/39**



**FIG. 20**



19/39



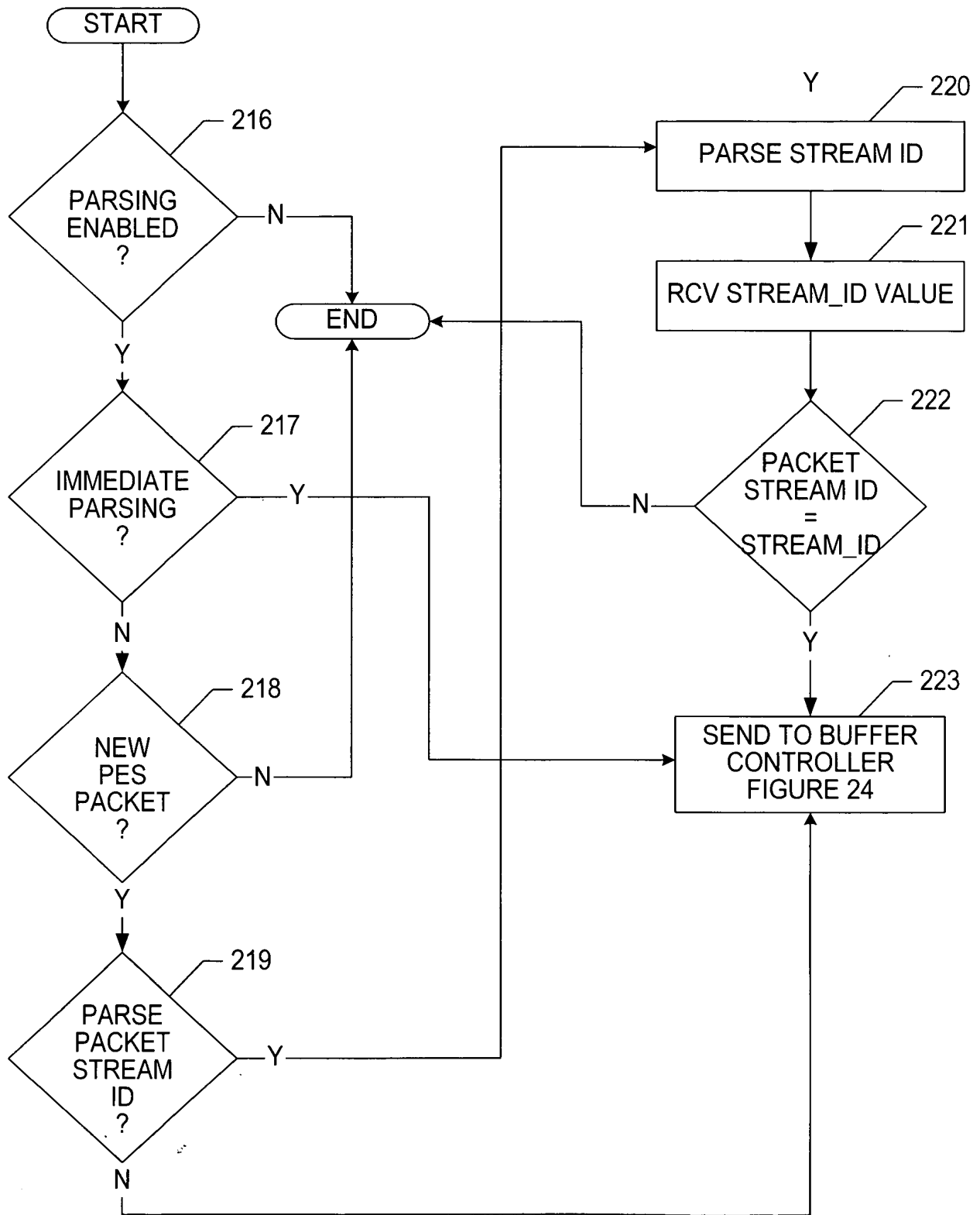
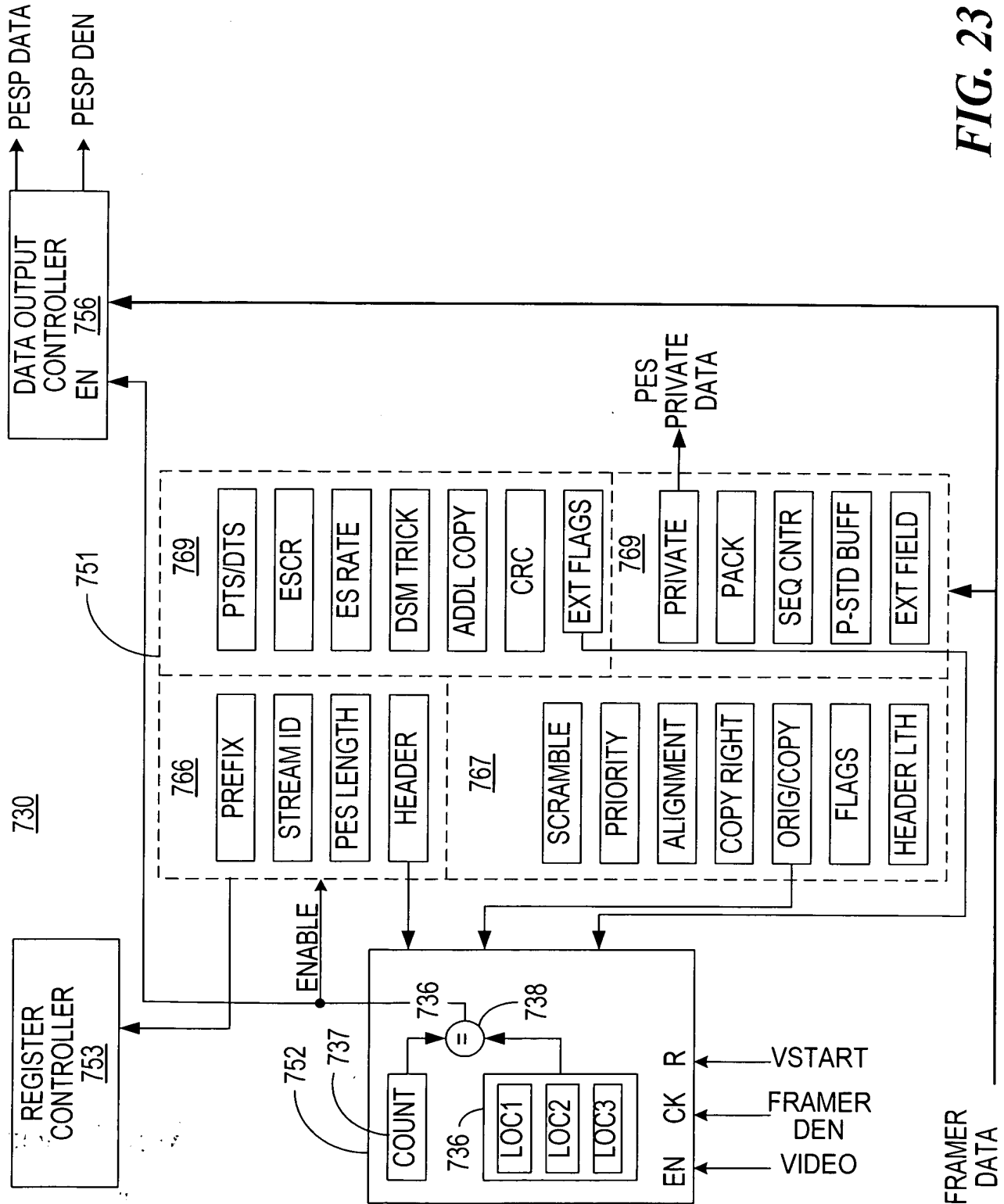


FIG. 22



21/39





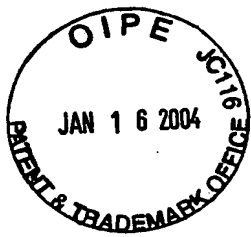
22/39

FIG. 24

Transport Demultiplexer Global Status Register			
Field Name	Bits Len Default	Type	Description
VideoPESHeaderAvailable	12 [ 1] 0	R/W	This bit is set to '1' when the new PES header of the video stream is received. <b>WR_ACC_CLEAR.</b>
VideoPESHeaderError	13 [ 1] 0	R/W	This bit is set to '1' after an error in the PES header is found. <b>WR_ACC_CLEAR.</b>
VideoPESDataAlignment	14 [ 1] 0	R/W	This bit is set to '1' when video PID has AF data_alignment_flag, indicating a possible start of I frame. <b>WR_ACC_CLEAR.</b>
VideoPESDSMTTrickMode	15 [ 1] 0	R/W	Indicates that DSM data is found and extracted. <b>WR_ACC_CLEAR.</b>
VideoPESPrivateData	16 [ 1] 0	R/W	This bit is set to '1' when video PID has 16 bytes of private data in the PES header. <b>WR_ACC_CLEAR.</b>
VideoPESCRCErr	17 [ 1] 0	R/W	This bit is set to '1' if the video CRC of the PES parser found a CRC mismatch. <b>WR_ACC_CLEAR.</b>

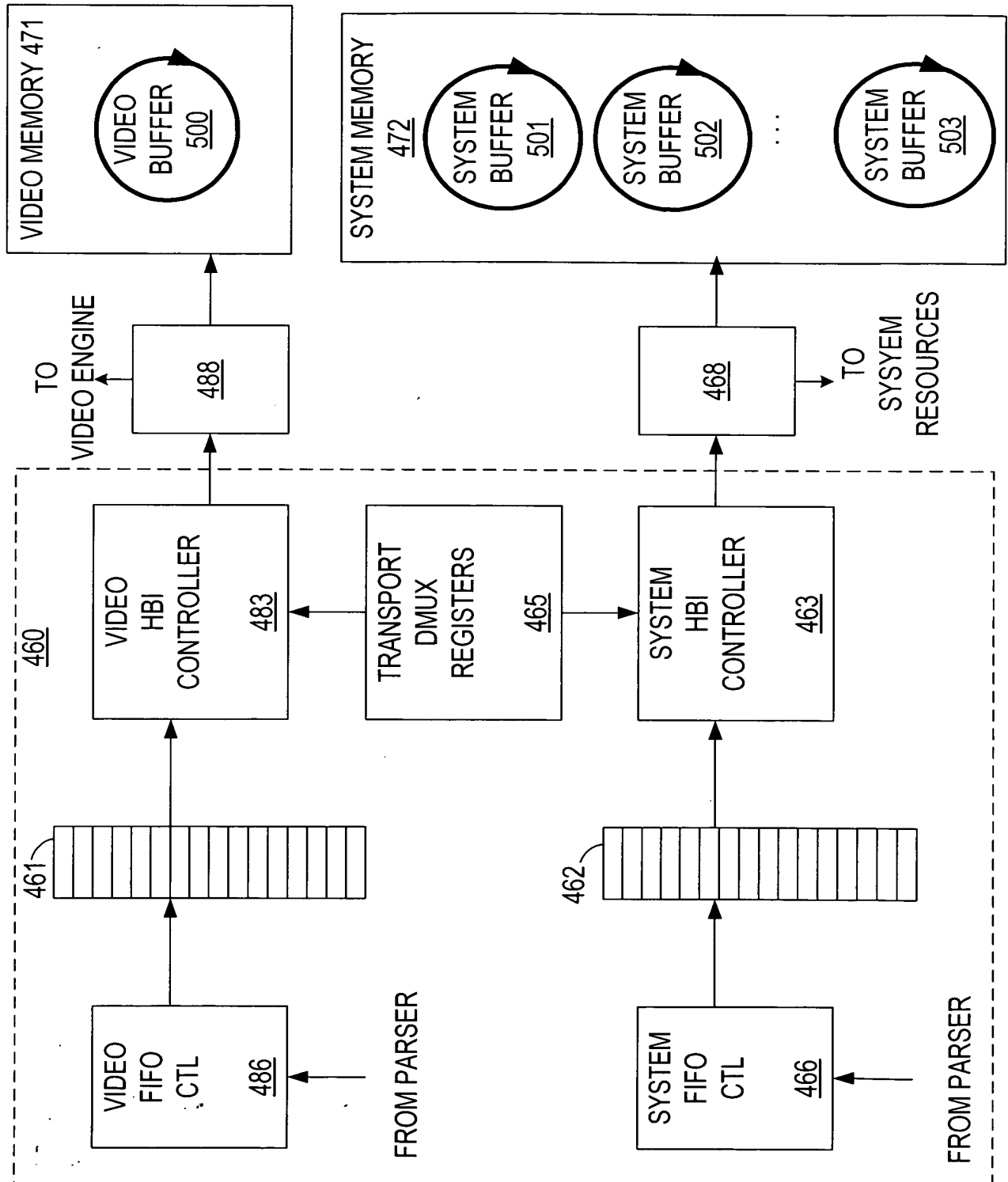
FIG. 25

Transport Demultiplexer Interrupt Mask Register			
Field Name	Bits Len Default	Type	Description
EventInterruptMask	0-18 [19] 0	R/W	If set to '1' enables local sources Bit 12 – VideoPESHeaderAvailable Bit 13 – VideoPESHeaderError Bit 14 – VideoPESDataAlignment Bit 15 – VideoPESDSMTTrickMode Bit 16 – VideoPESPrivateData Bit 17 – VideoPESCRCErr Bit 18 – VideoPTSReceived Bit 19 – VideoESCRRReceived



23/39

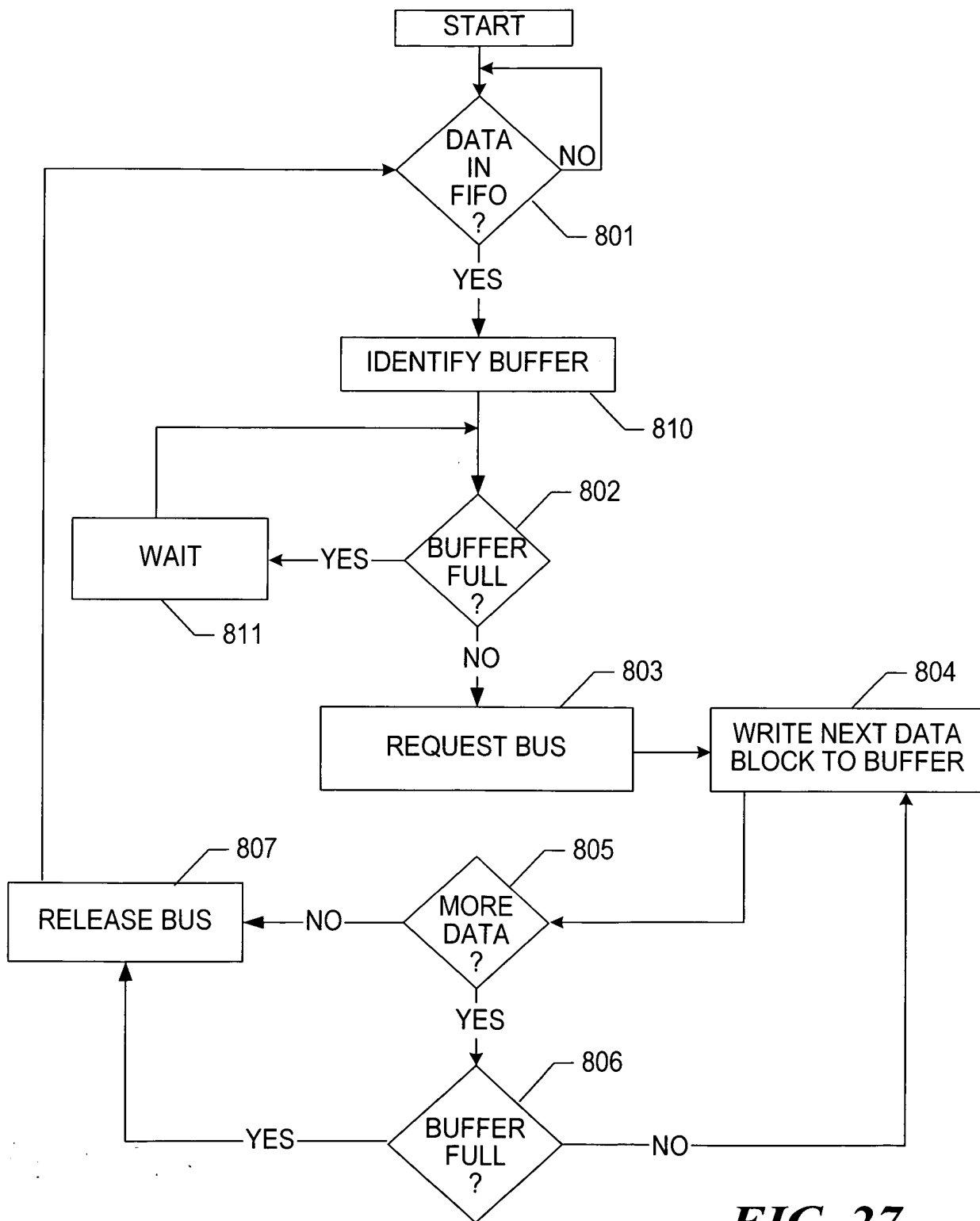
FIG. 26







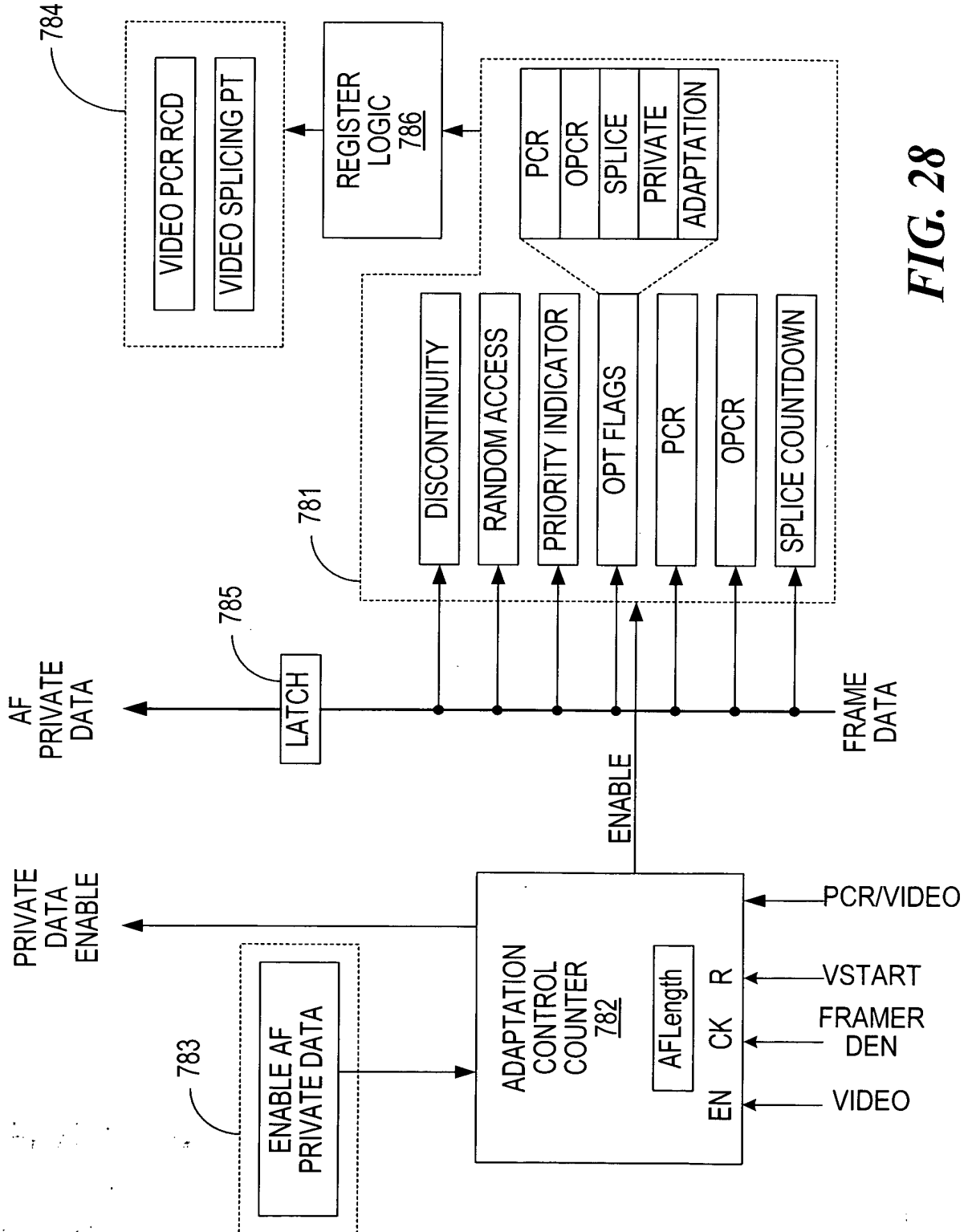
**24/39**



**FIG. 27**



25/39





26/39

Transport Demultiplexer Global Status Register			Description
Field Name	Bits	Len Default	
VideoAFPcrReceived	[ 1 ]	0	This bit is set to '1' after arrival and extraction of PCR sample in the adaptation field. <b>WR_ACC_CLEAR.</b>
VideoAFPcrDiscontinuity	[ 1 ]	0	This bit is set to '1' when a <i>discontinuity_indicator</i> in The adaptation field of the PCR PID is asserted. <b>WR_ACC_CLEAR.</b>
VideoAFDiscontinuityFlag	[ 1 ]	0	This bit is set to '1' after a <i>discontinuity_indicator_flag</i> has been asserted in the AF of video TP, indicating a discontinuity on continuity_counter. <b>WR_ACC_CLEAR.</b>
VideoAFRandomAccess	[ 1 ]	0	This bit is set to '1' when video PID has <i>random_access_flag</i> asserted in the AF, indicating a start of the elementary stream. <b>WR_ACC_CLEAR.</b>
VideoAFSplicingFlag	[ 1 ]	0	This bit is set to '1' when video PID has <i>splicing_point_flag</i> asserted in the AF, indicating approaching of the splicing point. <b>WR_ACC_CLEAR.</b>
VideoAFSplicingPoint	[ 1 ]	0	This bit is set to '1' when video PID has <i>splicing_point_flag</i> asserted in the AF, after splicing point occurred ( <i>splice_countdown</i> = 0). <b>WR_ACC_CLEAR.</b>
VideoAFPrivateData	[ 1 ]	0	This bit is set to '1' when video has AF private data. <b>WR_ACC_CLEAR.</b>
AFSpliceCountdown	[ 8 ]	0x00	Current splice countdown value from adaptation field of AV packets. Modified on the fly by AF content

FIG. 29

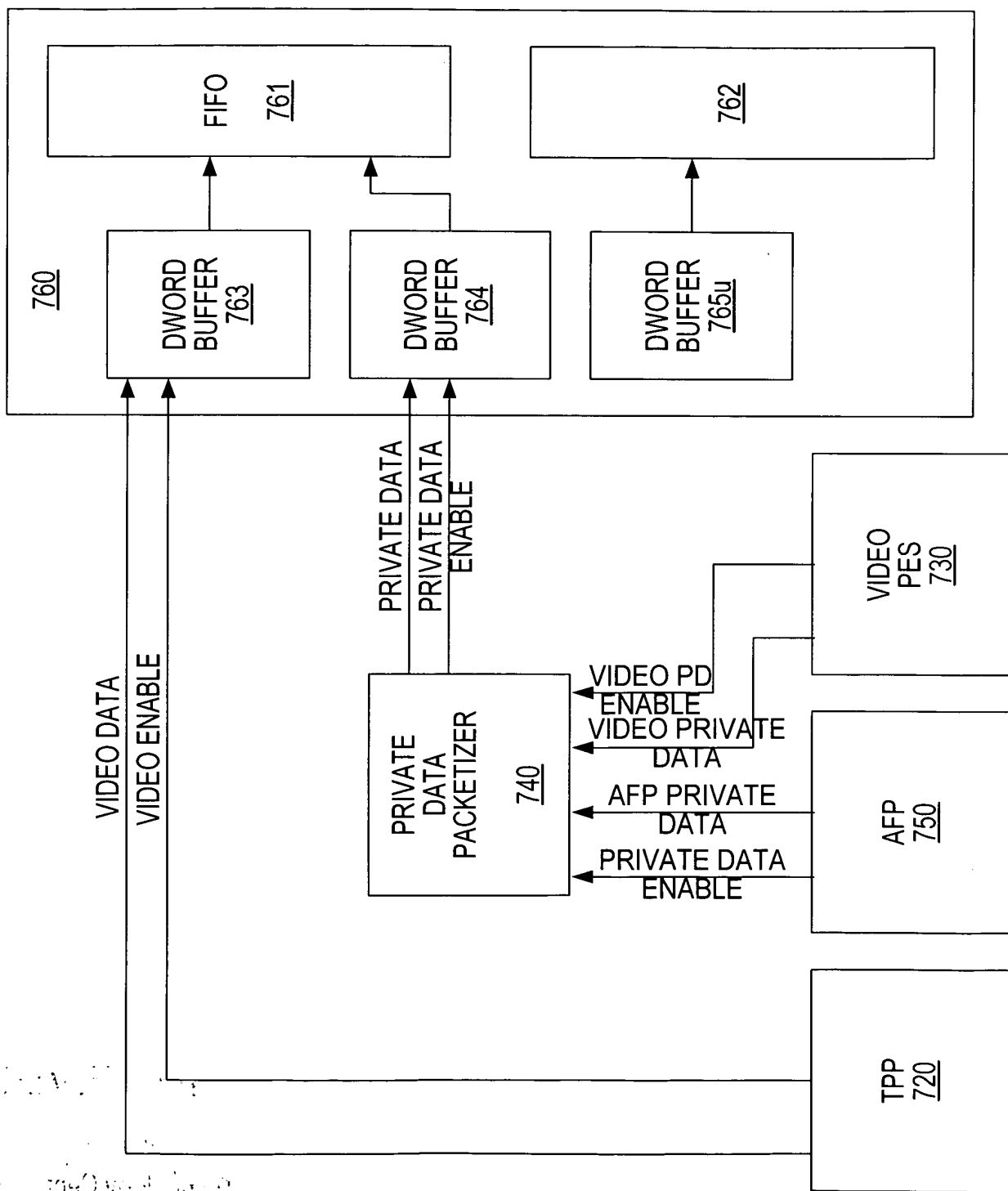


Transport Demultiplexer Interrupt Mask Register			
Field Name	Bits	Len	Type
EventInterruptMask	0-18	[19]	0
			R/W
			If set to '1' enables local sources Bit 5 – VideoAFPcrReceived Bit 6 – VideoAFPcrDiscontinuity Bit 7 – VideoAFDiscontinuityFlag Bit 8 – VideoAFRandomAccessFlag Bit 9 – VideoAFSplicingFlag Bit 10 – VideoAFSplicingPoint Bit 11 – VideoAFPrivateData

FIG. 30

Transport Demultiplexer Global Control Register			
Field Name	Bits	Len	Type
EnableAFPrivateData	[ 1]	0	R/W
AFPrivateDataBufferIndex	[ 4]	0	R/W
PCRIndex	[ 1]	0	R/W
EnableAutoSplicing	[ 1]	0	R/W

FIG. 31



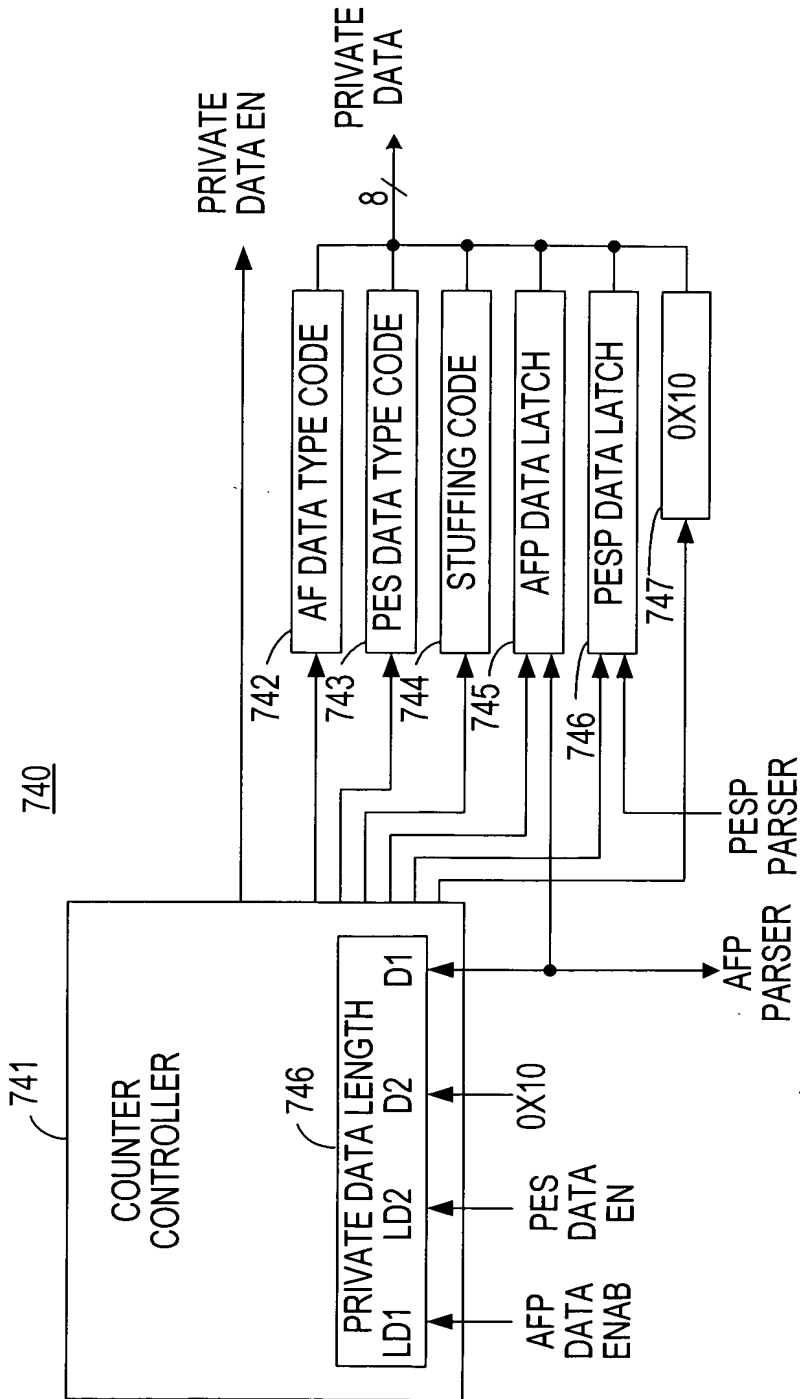


FIG. 33

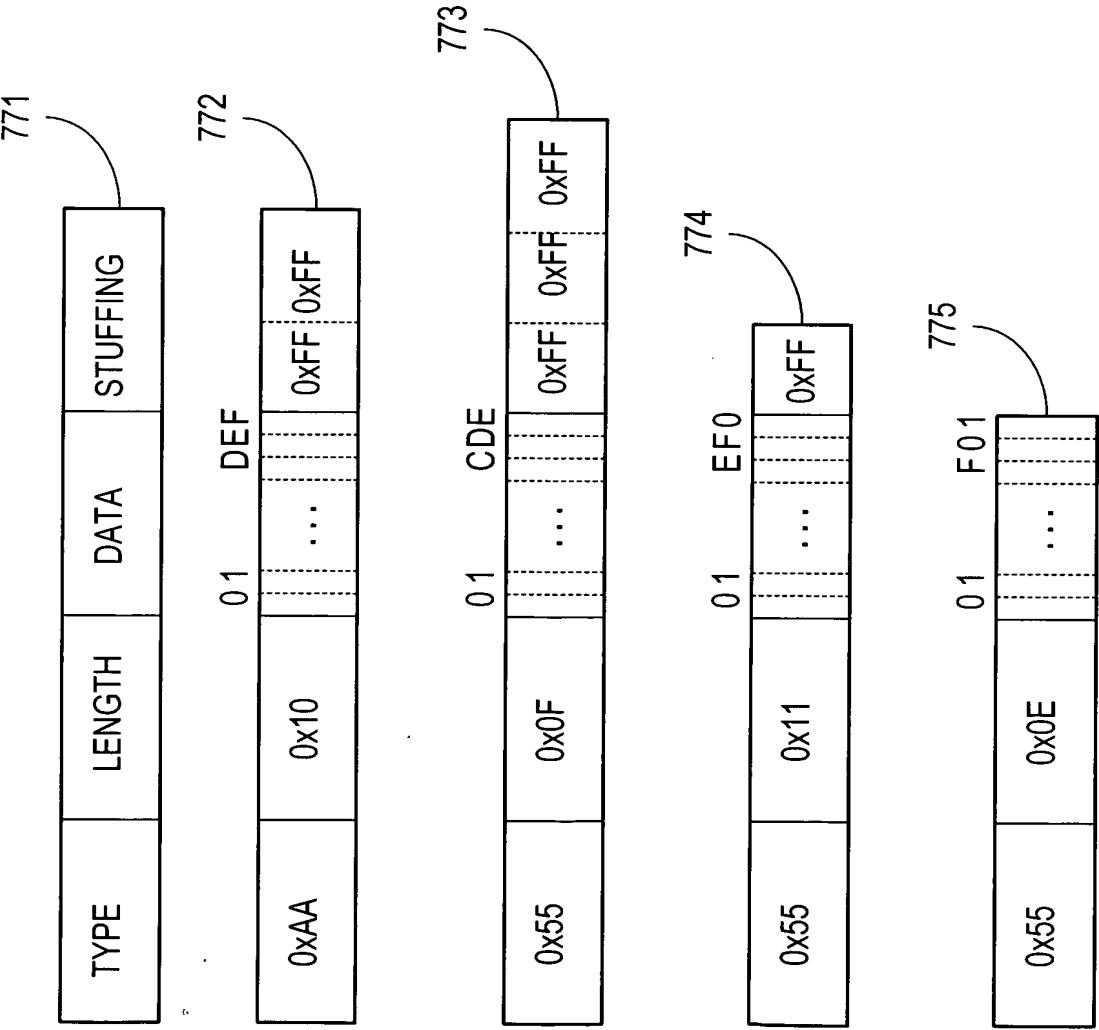
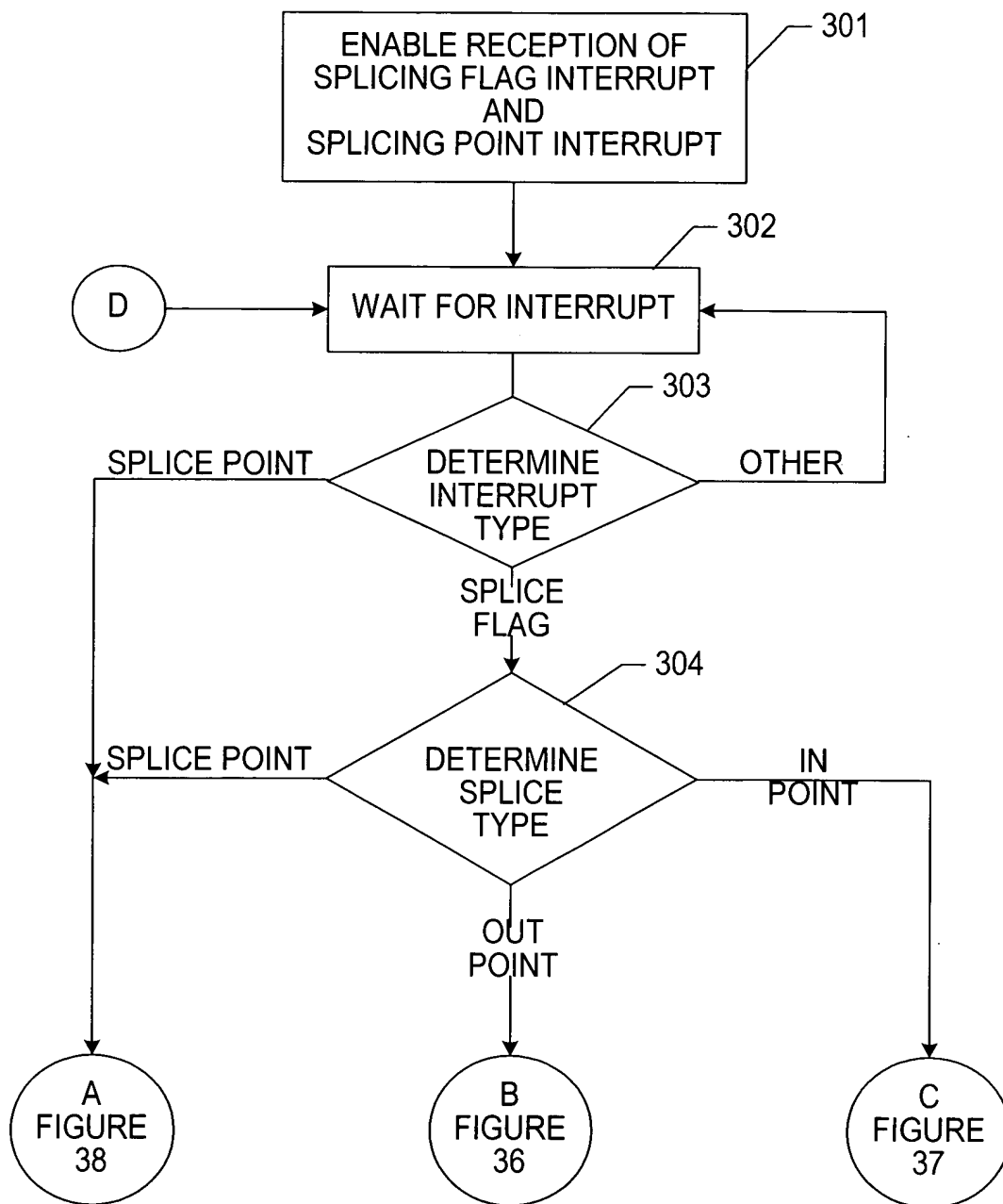


FIG. 34



**31/39**

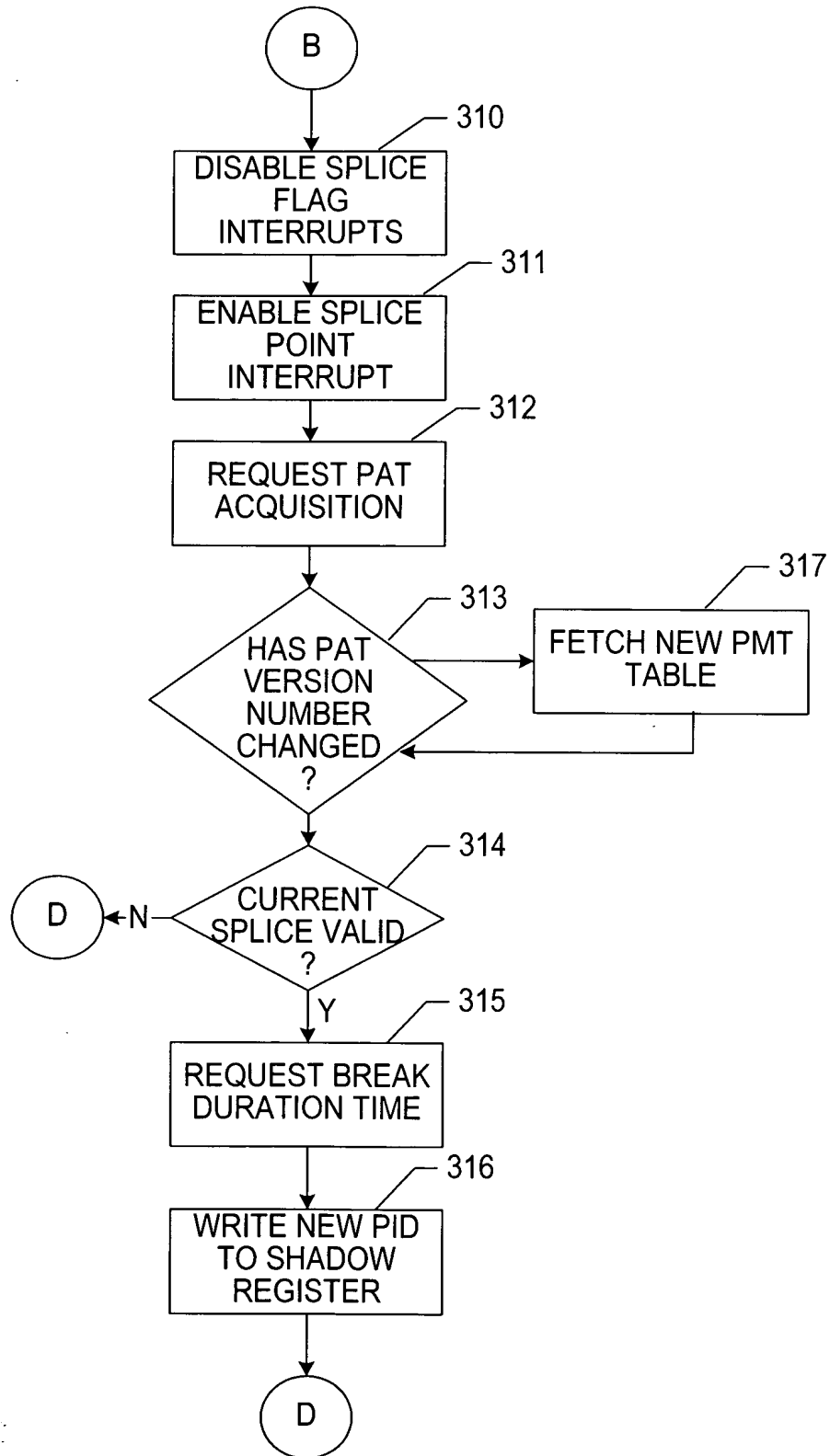


**FIG. 35**





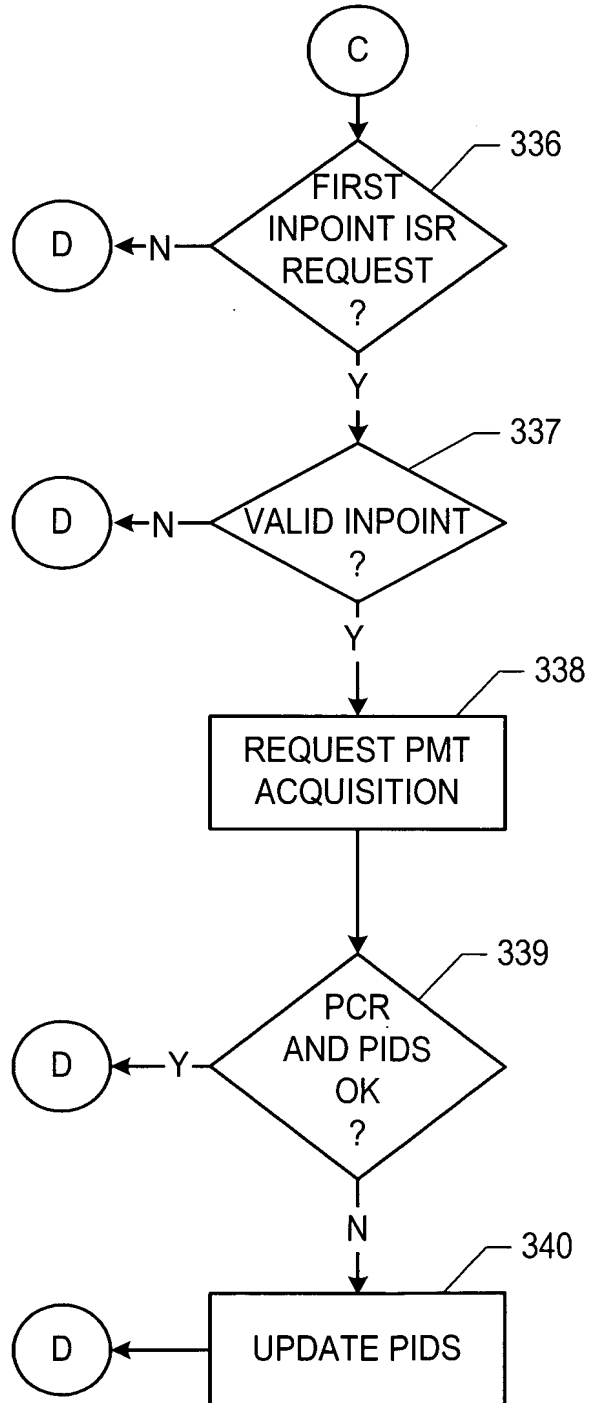
**32/39**



**FIG. 36**



**33/39**



**FIG. 37**

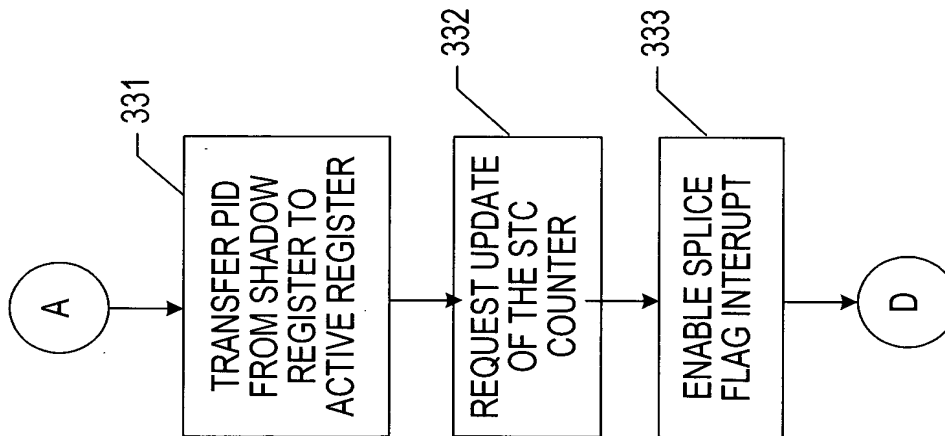


FIG. 38

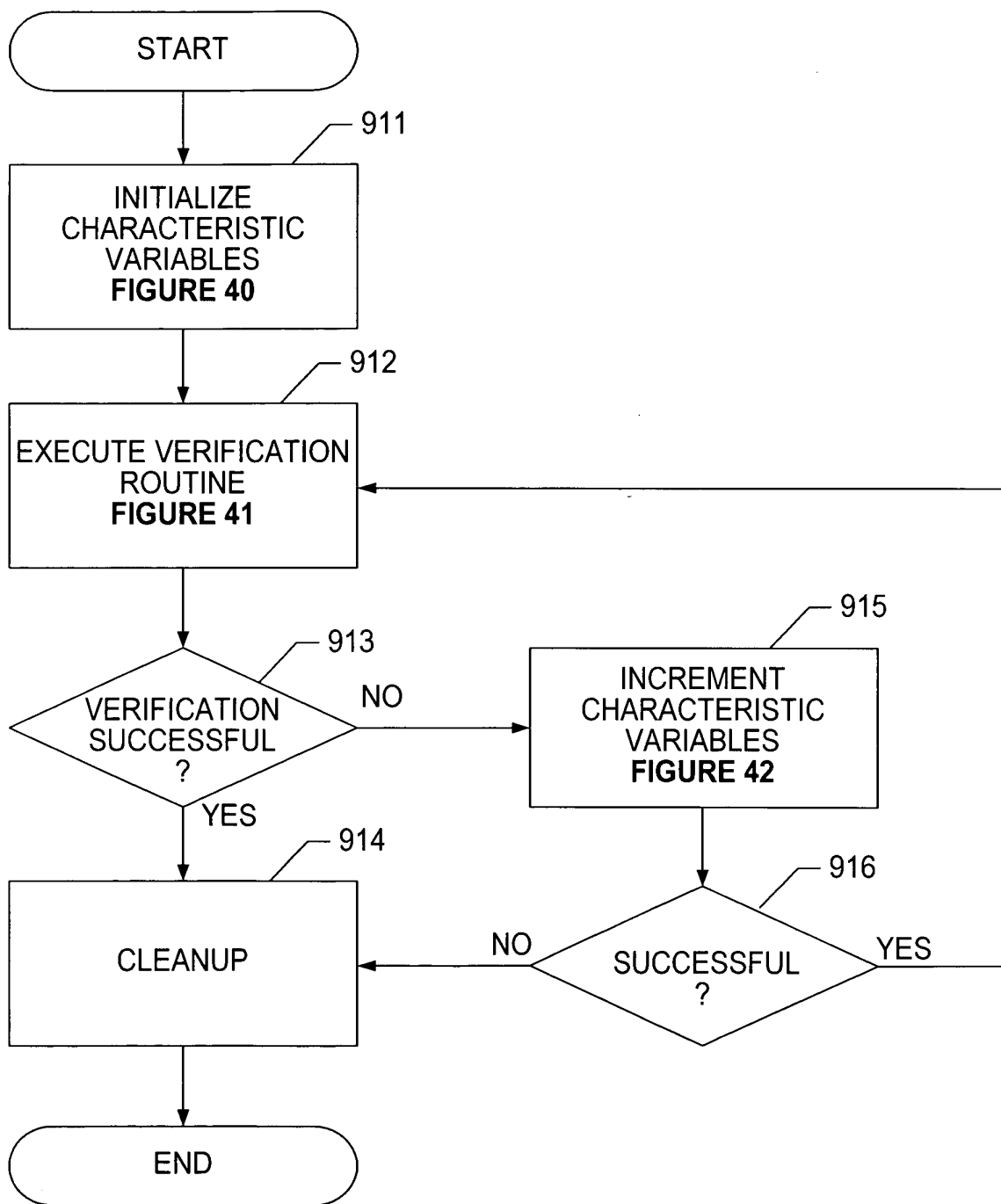


FIG. 39



36/39

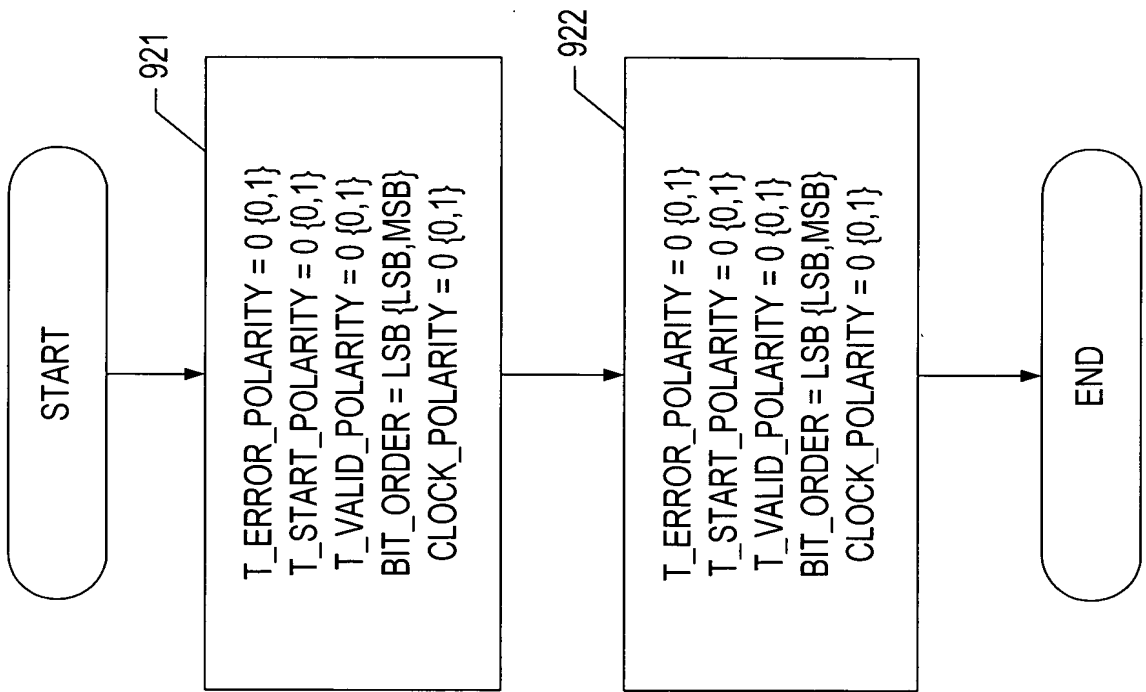
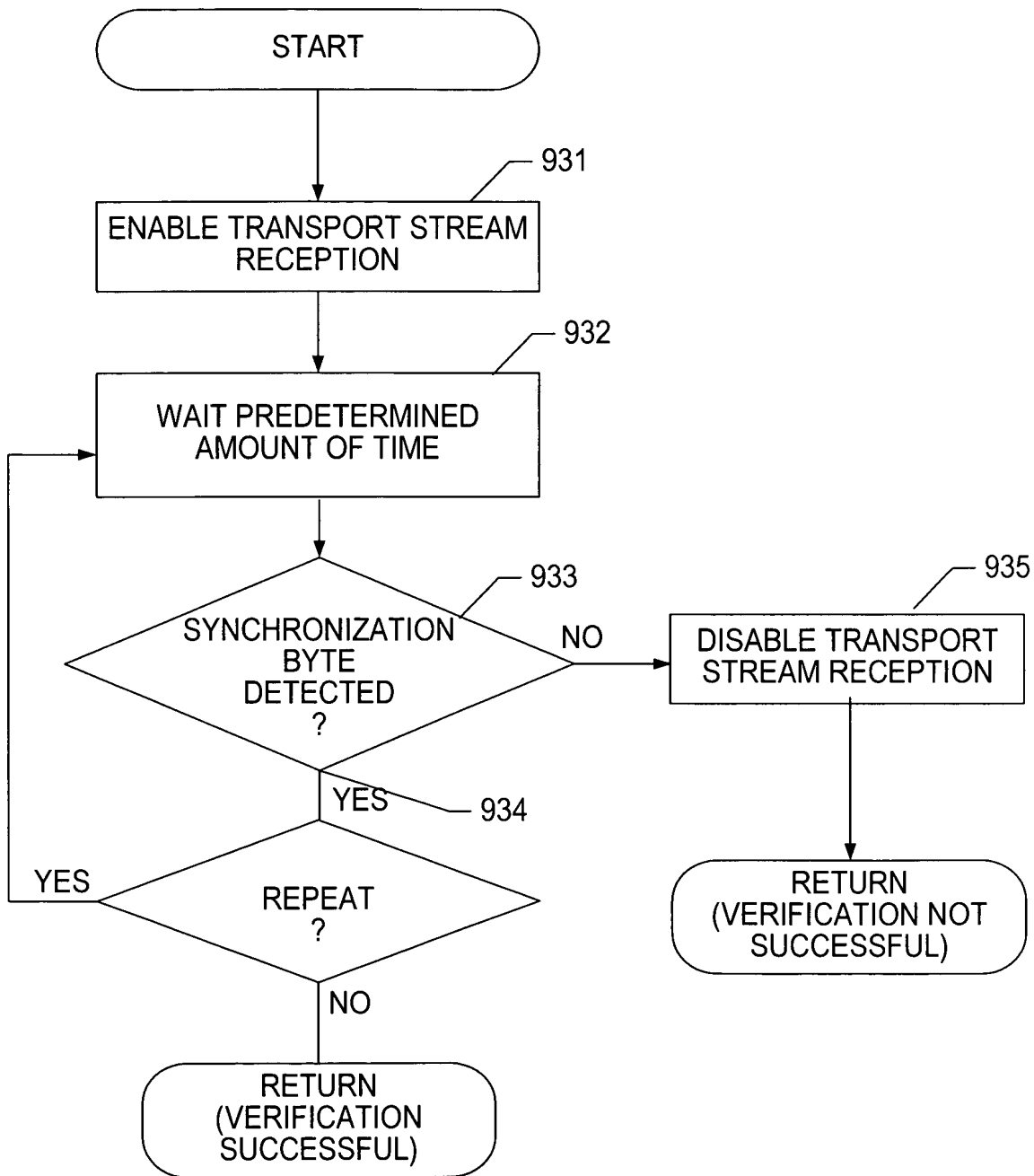


FIG. 40



**37/39**



**FIG. 41**



38/39

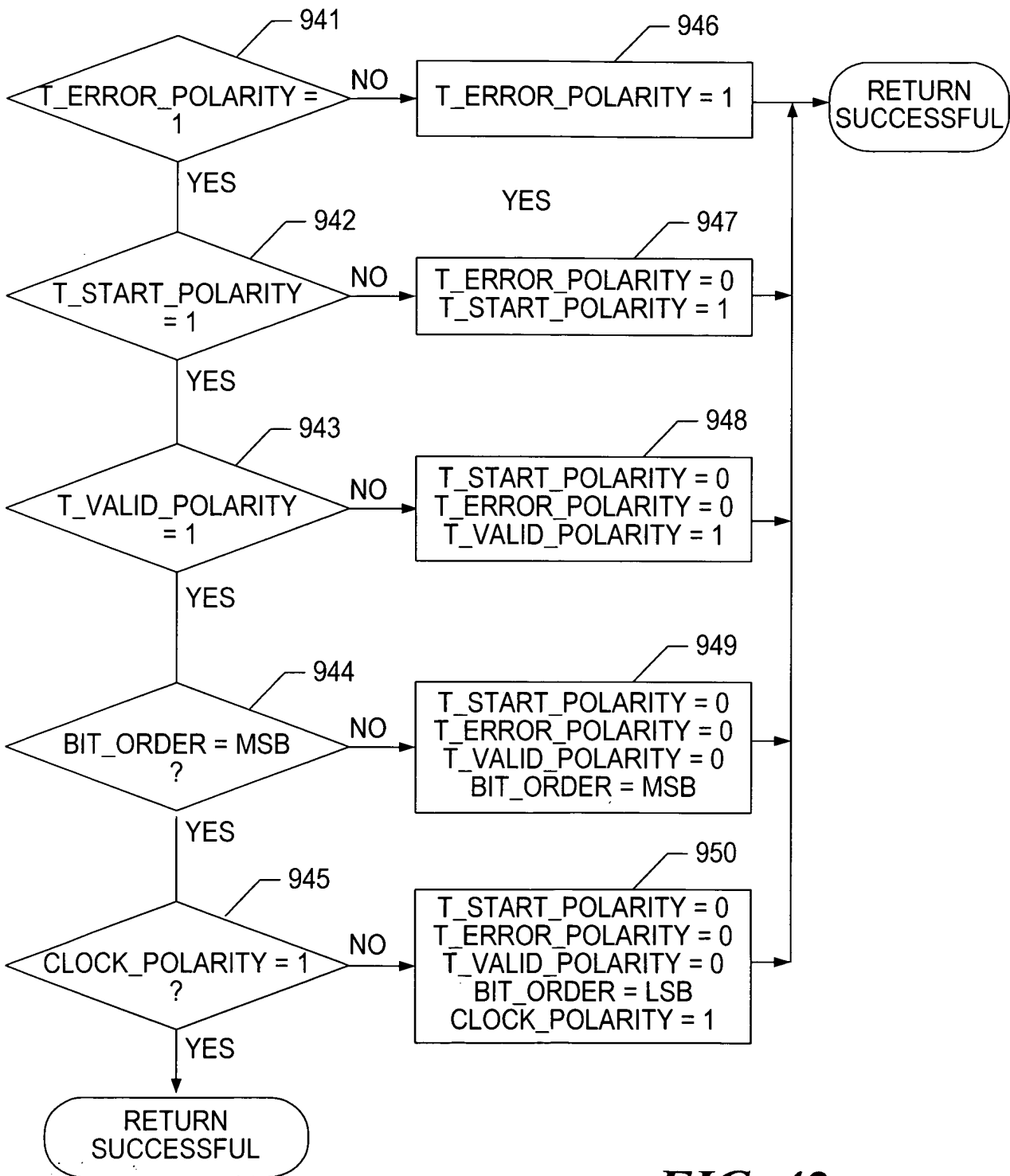


FIG. 42

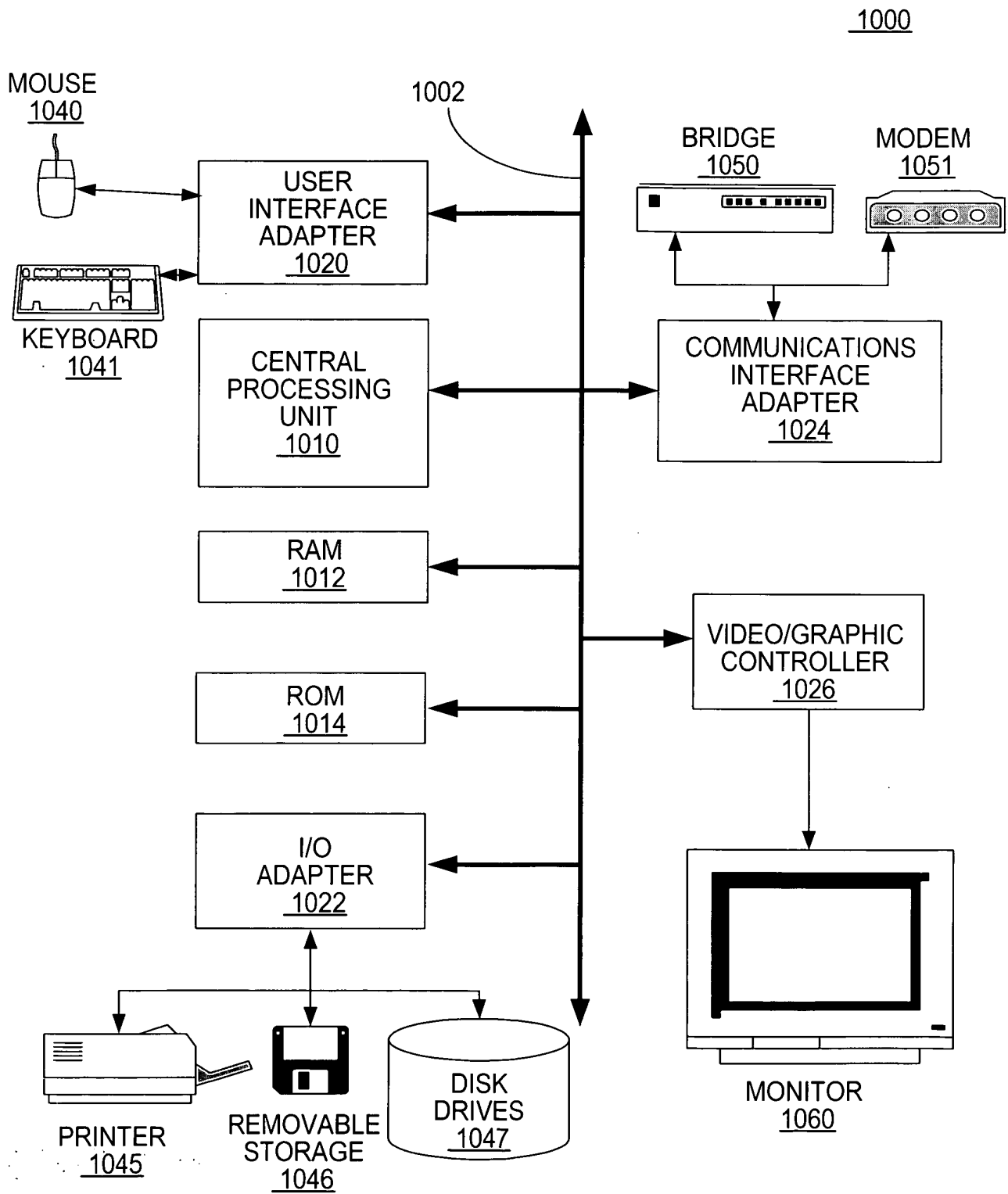


FIG. 43